PATENT COOPERATIO.. TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF WITHDRAWAL
OF PRIORITY CLAIM

(PCT Rule 90*bis*.3 and
Administrative Instructions, Section 415(a) and (b))

To:
NVB INTERNATIONAL
Gaerdet 12
P.O. Box 69
DK-3460 Birkerød
DANEMARK

Date of mailing (*day/month/year*) 22 September 1999 (22.09.99)	
Applicant's or agent's file reference 19587	**IMPORTANT NOTIFICATION**
International application No. PCT/DK99/00227	International filing date (*day/month/year*) 22 April 1999 (22.04.99)
Applicant NVB INTERNATIONAL	

1. The applicant is hereby notified that **the priority claim made in the international application has been withdrawn** in accordance with a notice of withdrawal received from the applicant on:

   20 September 1999 (20.09.99)

   The attention of the applicant is drawn to the fact that the withdrawal of the priority claim will result in the re-calculation of time limits which have not already expired (see Rule 90*bis*.3(d)).

2. ☐ In the case where **multiple priorities** have been claimed, the above action relates to the following priority claim(s):

3. A copy of this notification has been sent to the receiving Office and to:

   ☐ the International Searching Authority *(where the international search report has not yet been issued)*

   ☒ the designated Offices *(which have already been notified of the receipt of the record copy)*

   ☐ the International Preliminary Examining Authority

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer
Catherine Massetti

Telephone No. (41-22) 338.83.38

99/DK 08 JUNE 1999

PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No. PCT/DK99/00227

International Filing Date 22 APRIL 1999

Name of receiving Office and "PCT International Application" Patentdirektoratet Danish Patent Office

Applicant's or agent's file reference *(if desired) (12 characters maximum)* 19587

▲ Corrected by RO/DK

Box No. I TITLE OF INVENTION

A Device comprising a Combination of a Chamber and a Piston ▲

Box No. II APPLICANT

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

NVB International
Gaerdet 12, P.O.Box 69
3460 Birkerød
Denmark

☐ This person is also inventor.

Telephone No. +45 4581 1597

Facsimile No. +45 4582 1557

Teleprinter No.

State *(that is, country)* of nationality:

State *(that is, country)* of residence: DK

This person is applicant for the purposes of: ☐ all designated States ☒ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

Van der Blom, Nicolaas
Gaerdet 12
3460 Birkerød
Denmark

This person is:

☐ applicant only

☒ applicant and inventor

☐ inventor only *(If this check-box is marked, do not fill in below.)*

State *(that is, country)* of nationality: NL

State *(that is, country)* of residence: DK

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

☐ Further applicants and/or (further) inventors are indicated on a continuation sheet.

Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: ☐ agent ☐ common representative

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

Telephone No.

Facsimile No.

Teleprinter No.

☐ **Address for correspondence:** Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent

Box No.V DESIGNATION OF STATES

The following designations are hereby made under Rule 4.9(a) *(mark the applicable check-boxes; at least one must be marked)*:

Regional Patent

- ☒ AP ARIPO Patent: GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SZ Swaziland, UG Uganda, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT
- ☒ EA Eurasian Patent: AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakhstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT
- ☒ EP European Patent: AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☒ OA OAPI Patent: BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT *(if other kind of protection or treatment desired, specify on dotted line)* .....

National Patent *(if other kind of protection or treatment desired, specify on dotted line)*:

- ☒ AL Albania .....
- ☒ AM Armenia .....
- ☒ AT Austria .....
- ☒ AU Australia .....
- ☒ AZ Azerbaijan
- ☒ BA Bosnia and Herzegovina .....
- ☒ BB Barbados
- ☒ BG Bulgaria .....
- ☒ BR Brazil .....
- ☒ BY Belarus .....
- ☒ CA Canada
- ☒ CH and LI Switzerland and Liechtenstein
- ☒ CN China .....
- ☒ CU Cuba .....
- ☒ CZ Czech Republic .....
- ☒ DE Germany .....
- ☒ DK Denmark .....
- ☒ EE Estonia .....
- ☒ ES Spain .....
- ☒ FI Finland .....
- ☒ GB United Kingdom
- ☒ GD Grenada
- ☒ GE Georgia .....
- ☒ GH Ghana .....
- ☒ GM Gambia
- ☒ HR Croatia .....
- ☒ HU Hungary .....
- ☒ ID Indonesia
- ☒ IL Israel .....
- ☒ IN India .....
- ☒ IS Iceland
- ☒ JP Japan .....
- ☒ KE Kenya .....
- ☒ KG Kyrgyzstan .....
- ☒ KP Democratic People's Republic of Korea .....
- ☒ KR Republic of Korea .....
- ☒ KZ Kazakhstan .....
- ☒ LC Saint Lucia
- ☒ LK Sri Lanka
- ☒ LR Liberia
- ☒ LS Lesotho .....
- ☒ LT Lithuania
- ☒ LU Luxembourg
- ☒ LV Latvia
- ☒ MD Republic of Moldova .....
- ☒ MG Madagascar .....
- ☒ MK The former Yugoslav Republic of Macedonia .....
- ☒ MN Mongolia
- ☒ MW Malawi .....
- ☒ MX Mexico .....
- ☒ NO Norway
- ☒ NZ New Zealand .....
- ☒ PL Poland .....
- ☒ PT Portugal .....
- ☒ RO Romania
- ☒ RU Russian Federation .....
- ☒ SD Sudan
- ☒ SE Sweden
- ☒ SG Singapore
- ☒ SI Slovenia .....
- ☒ SK Slovakia .....
- ☒ SL Sierra Leone
- ☒ TJ Tajikistan .....
- ☒ TM Turkmenistan .....
- ☒ TR Turkey .....
- ☒ TT Trinidad and Tobago .....
- ☒ UA Ukraine .....
- ☒ UG Uganda .....
- ☒ US United States of America .....
- ☒ UZ Uzbekistan .....
- ☒ VN Viet Nam .....
- ☒ YU Yugoslavia .....
- ☒ ZW Zimbabwe .....

Check-boxes reserved for designating States (for the purposes of a national patent) which have become party to the PCT after issuance of this sheet:

- ☒ AE United Arab Emirates .....
- ☒ ZA South Africa .....
- ☐ .....

Precautionary Designation Statement: In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. *(Confirmation of a designation consists of the filing of a notice specifying that designation and the payment of the designation and confirmation fees. Confirmation must reach the receiving Office within the 15-month time limit.)*

Box No. VI PRIORITY CLAIM ☐ Further priority claims are indicated in the Supplemental Box.

Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is: national application: country	regional application:* regional Office	international application: receiving Office
item (1) 22.04.1998	98 00148 [~~DK98/00148 U3~~]	DK		
item (2)				
item (3)				

RO/DK

☒ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) *(only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office)* identified above as item(s):

* *Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii)). See Supplemental Box.*

Box No. VII INTERNATIONAL SEARCHING AUTHORITY

Choice of International Searching Authority (ISA) *(if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used)*: ISA / SE

Request to use results of earlier search; reference to that search *(if an earlier search has been carried out by or requested from the International Searching Authority)*: Date *(day/month/year)* Number Country *(or regional Office)*

Box No. VIII CHECK LIST; LANGUAGE OF FILING

This international application contains the following number of sheets:

request	:	3
description (excluding sequence listing part)	:	29
claims	:	10
abstract	:	1
drawings	:	30
sequence listing part of description	:	7
Total number of sheets	:	80

This international application is accompanied by the item(s) marked below:

1. ☒ fee calculation sheet
2. ☐ separate signed power of attorney
3. ☐ copy of general power of attorney; reference number, if any:
4. ☐ statement explaining lack of signature
5. ☐ priority document(s) identified in Box No. VI as item(s):
6. ☐ translation of international application into (language):
7. ☐ separate indications concerning deposited microorganism or other biological material
8. ☐ nucleotide and/or amino acid sequence listing in computer readable form
9. ☐ other *(specify)*:

Figure of the drawings which should accompany the abstract: 12B

Language of filing of the international application: English

Box No. IX SIGNATURE OF APPLICANT OR AGENT

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).

Nicolaas van der Blom
Director and owner of NVB International
Inventor

NVB International
Gærdet 12, P.O. Box 69
3460 Birkerød, Denmark
tel. +45 45 81 15 97
fax +45 45 82 15 57

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1. Date of actual receipt of the purported international application: RO/DK 22 APR 1999 (22.04.99)
2. Drawings: ☐ received: ☐ not received:
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:
4. Date of timely receipt of the required corrections under PCT Article 11(2):
5. International Searching Authority (if two or more are competent): ISA / SE
6. ☐ Transmittal of search copy delayed until search fee is paid.

For International Bureau use only

Date of receipt of the record copy by the International Bureau:

PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 :
F04B 53/16 // 53/14, F16J 10/02

A1

(11) International Publication Number: WO 00/65235

(43) International Publication Date: 2 November 2000 (02.11.00)

(21) International Application Number: PCT/DK99/00227

(22) International Filing Date: 22 April 1999 (22.04.99)

(71) Applicant *(for all designated States except US)*: NVB INTERNATIONAL [DK/DK]; Gaerdet 12, P.O. Box 69, DK–3460 Birkerød (DK).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: VAN DER BLOM, Nicolaas [NL/DK]; Gaerdet 12, DK–3460 Birkerød (DK).

(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

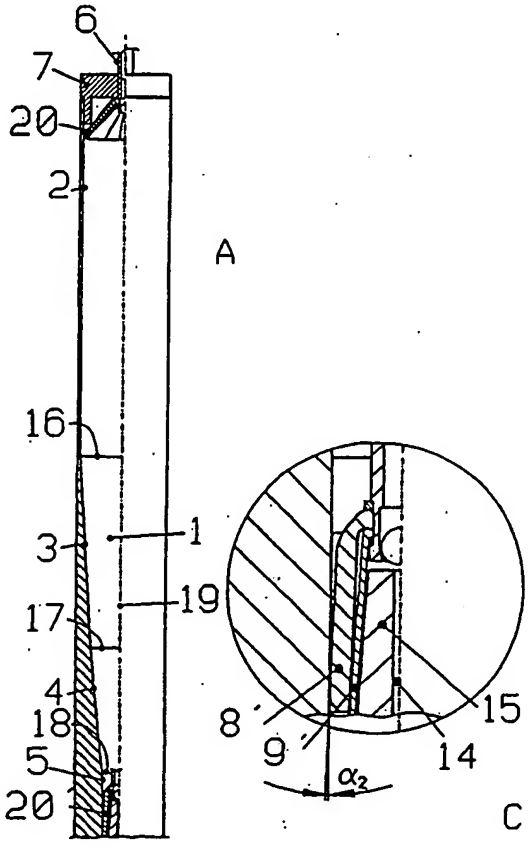
Published

With international search report.

(54) Title: A DEVICE COMPRISING A COMBINATION OF A CHAMBER AND A PISTON

(57) Abstract

The object of the invention is to provide a reliable and inexpensive combination of a chamber and a piston to be used in any device where such a combination is needed so that it complies with specific demands towards the operation force for e.g. pumps, specifically manually operated pumps. By a device comprising a chamber and a piston positioned inside the chamber said chamber and said piston relatively movable to each other in a predetermined direction of movement between a first position and a second position of which the cross–section of the chamber in a plane perpendicular to the direction of movement is larger at the first position than at the second position, the change in the cross section of the chamber is essentially continuous between the first position and the second position and the cross–section of the piston in a plane perpendicular to the direction of movement is arranged to adapt itself to the cross–section of the chamber. It is further possible that the piston has a fixed geometrical shape, that the wall of the chamber has different sizes of cross–sections in the direction of the movement and is arranged to adapt itself to the piston. Moreover, both the piston and the wall of the chamber can adapt itself to each other.



FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
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EE	Estonia	LR	Liberia	SG	Singapore		

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 19587	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/DK 99/00227	International filing date *(day/month/year)* 22 April 1999	(Earliest) Priority Date *(day/month/year)* 22 April 1998
Applicant NVB International et al		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 2 sheets.

[X] It is also accompanied by a copy of each prior art document cited in this report.

1. [ ] Certain claims were found unsearchable (See Box I).

2. [ ] Unity of invention is lacking (See Box II).

3. [ ] The international application contains disclosure of a **nucleotide and/or amino acid sequence listing** and the international search was carried out on the basis of the sequence listing
   - [ ] filed with the international application.
   - [ ] furnished by the applicant separately from the international application,
     - [ ] but not accompanied by a statement to the effect that it did not include matter going beyond the disclosure in the international application as filed.
   - [ ] transcribed by this Authority.

4. With regard to the title,
   - [X] the text is approved as submitted by the applicant.
   - [ ] the text has been established by this Authority to read as follows:

5. With regard to the abstract,
   - [X] the text is approved as submitted by the applicant.
   - [ ] the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is:
   Figure No. 3A-3C
   - [ ] as suggested by the applicant.
   - [ ] because the applicant failed to suggest a figure.
   - [X] because this figure better characterizes the invention.
   - [ ] None of the figures.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/DK 99/00227

A. CLASSIFICATION OF SUBJECT MATTER

IPC6: F04B 53/16 // F04B 53/14, F16J 10/02
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC6: F04B, F16J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2070731 A (WALL & LEIGH (THERMOPLASTICS) LIMITED), 9 Sept 1981 (09.09.81), abstract ---	1-9
X	GB 2023715 A (LE-CAS LIMITED), 3 January 1980 (03.01.80), page 1, line 67 - line 68 --- --------	1-9

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" erlier document but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
30 July 1999	06 -08- 1999
Name and mailing address of the ISA/ Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. +46 8 666 02 86	Authorized officer Sune Söderling Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT

Information on patent family members

01/07/99

International application No.
PCT/DK 99/00227

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2070731 A	09/09/81	NONE	
GB 2023715 A	03/01/80	NONE	

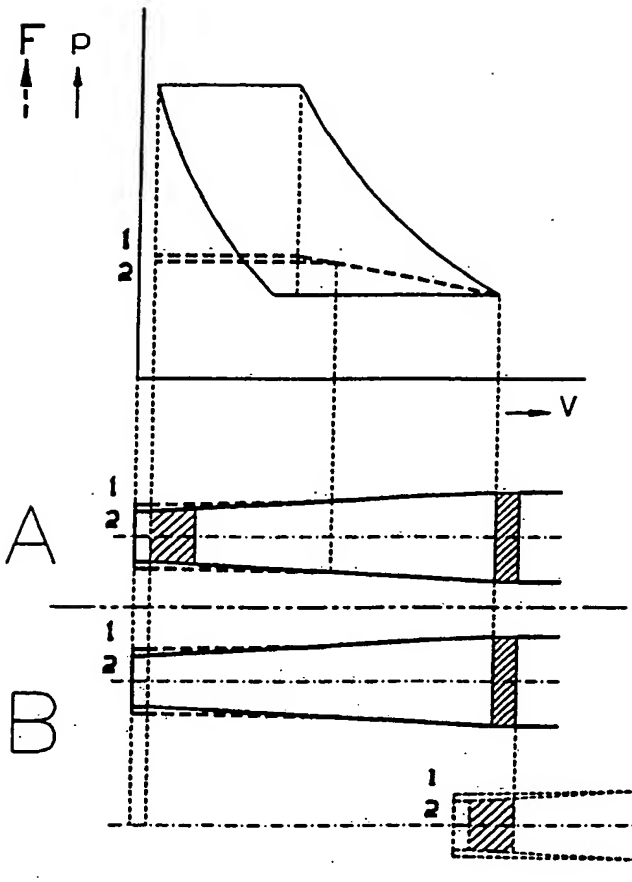


Fig. 2A

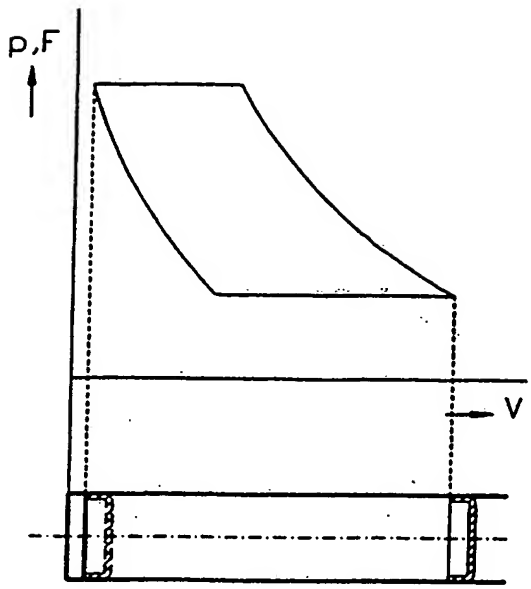


Fig. 1

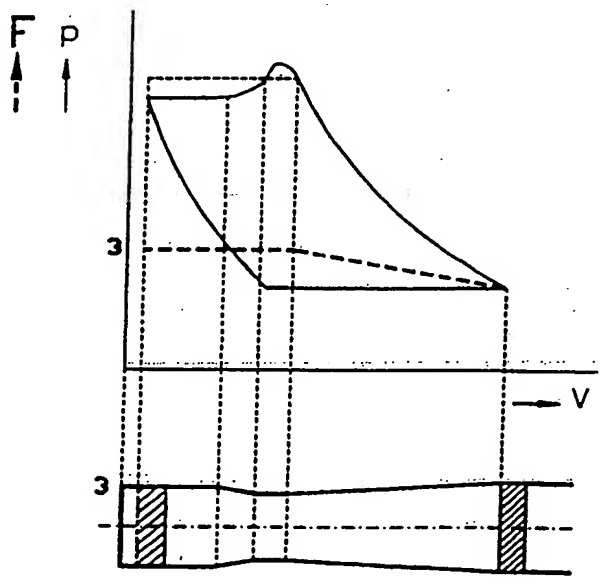


Fig. 2B

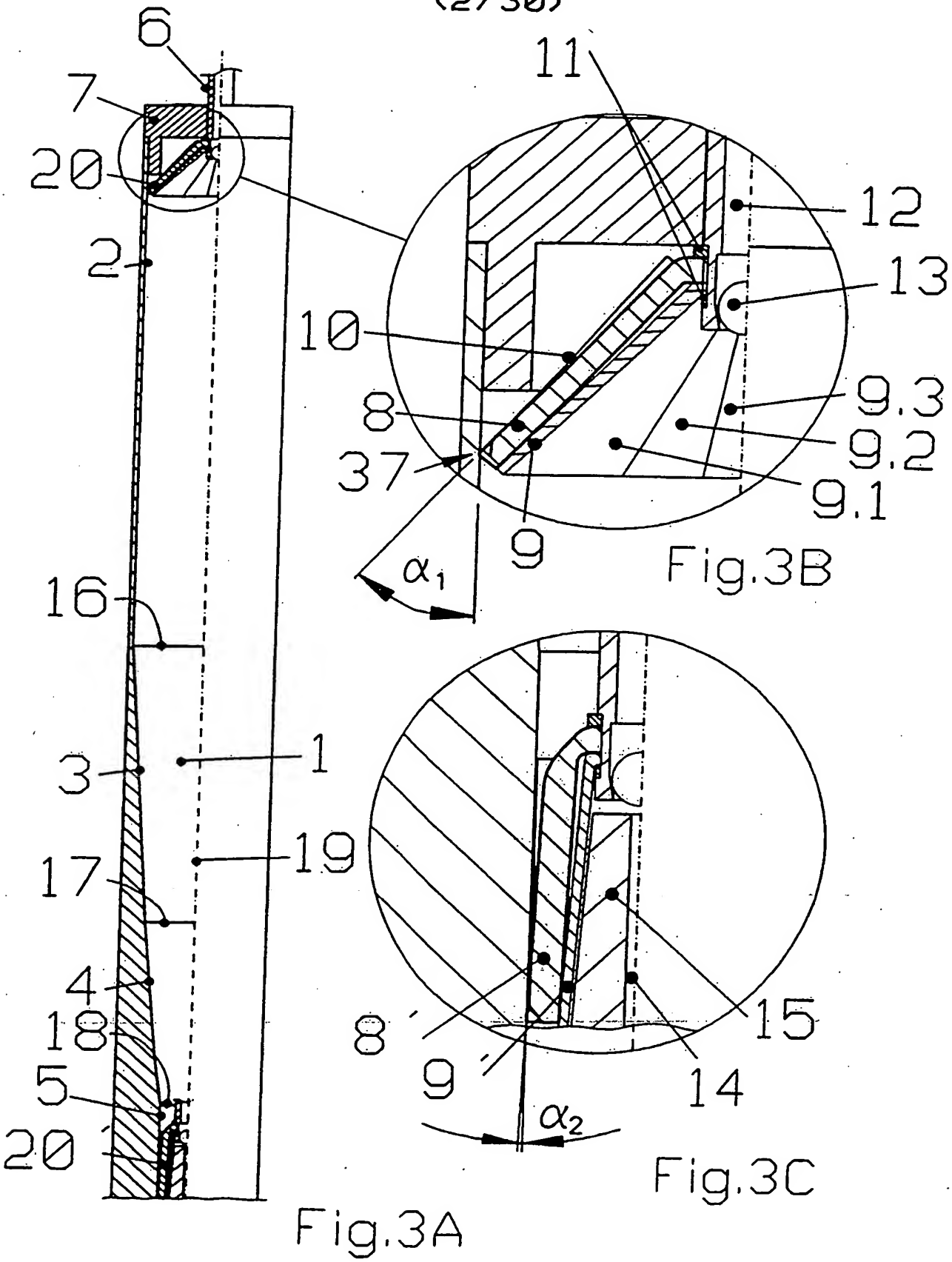


Fig.3A

Fig.3B

Fig.3C

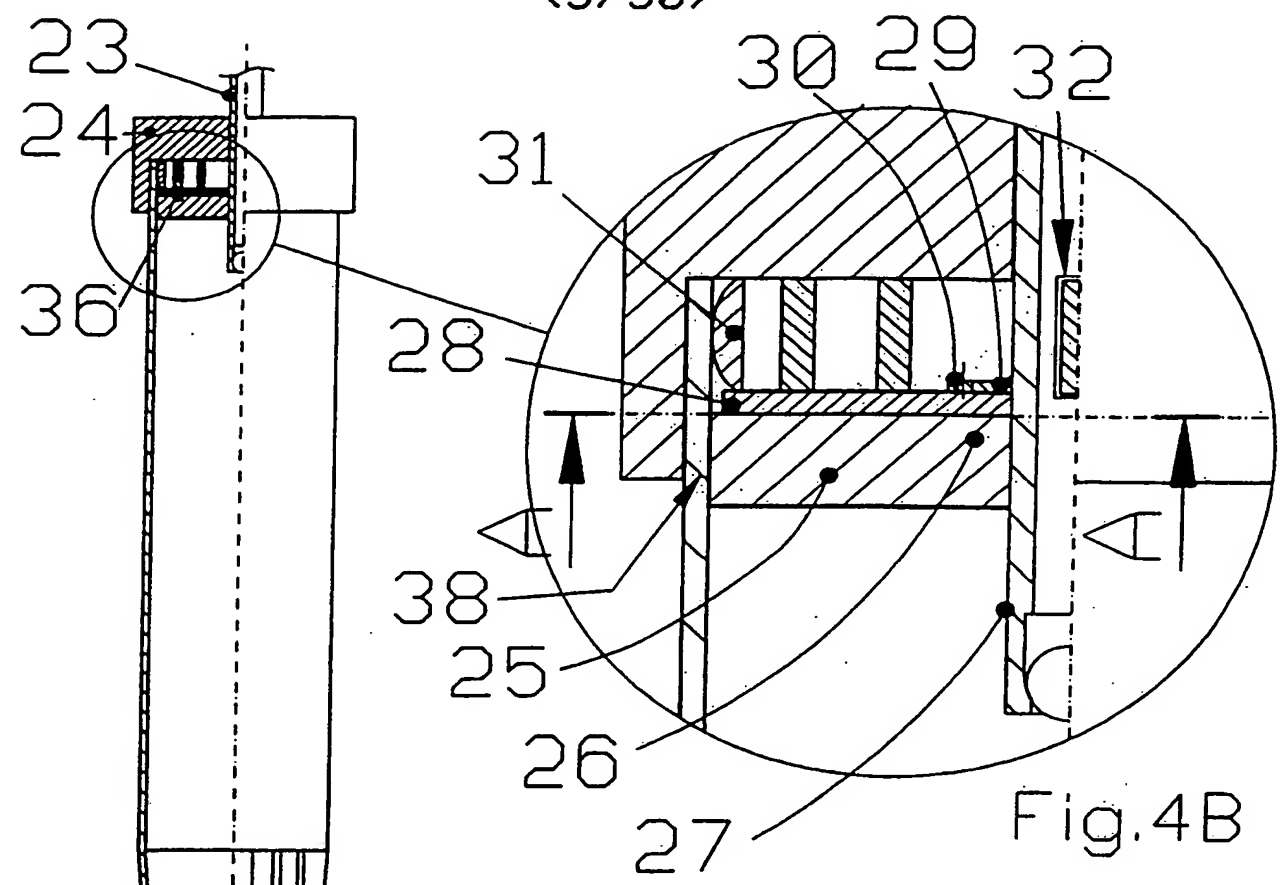


Fig.4B

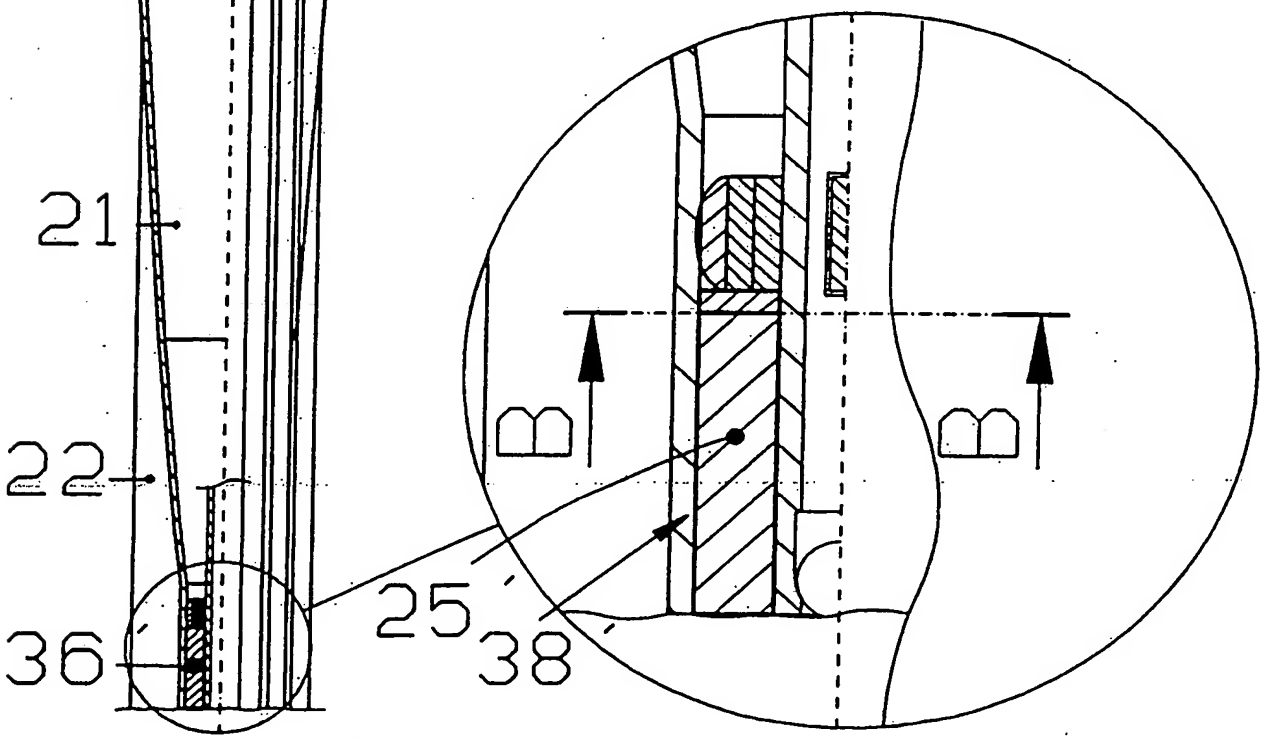


Fig.4A

Fig.4C

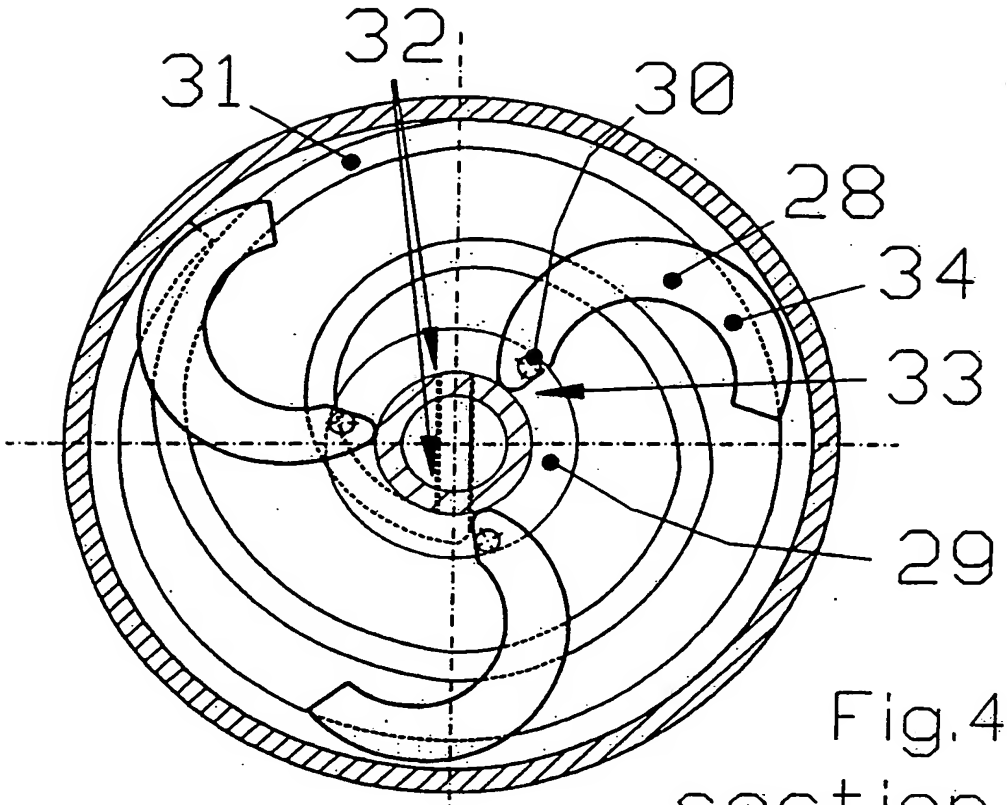


Fig.4D
section A-A

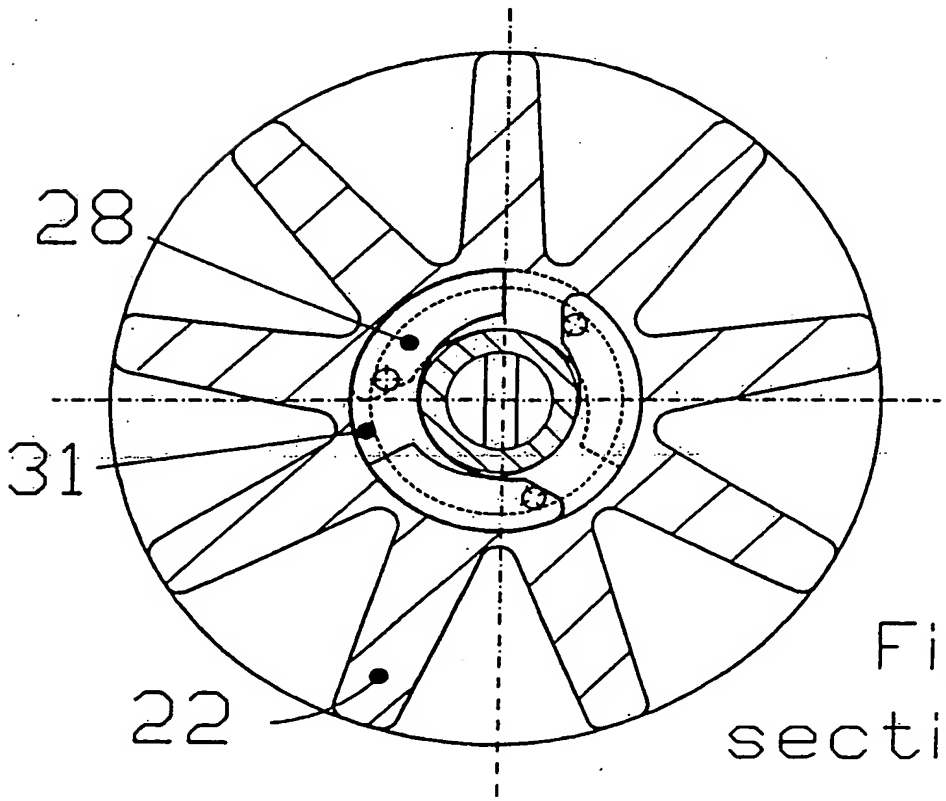


Fig.4E
section B-B

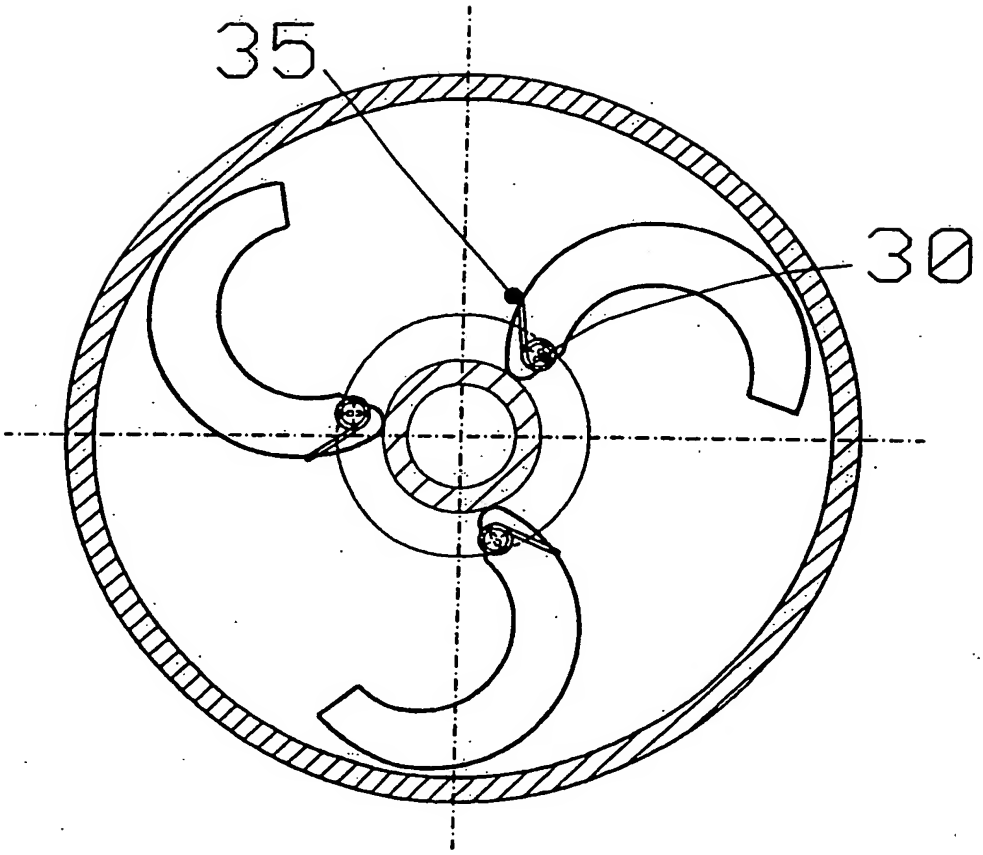
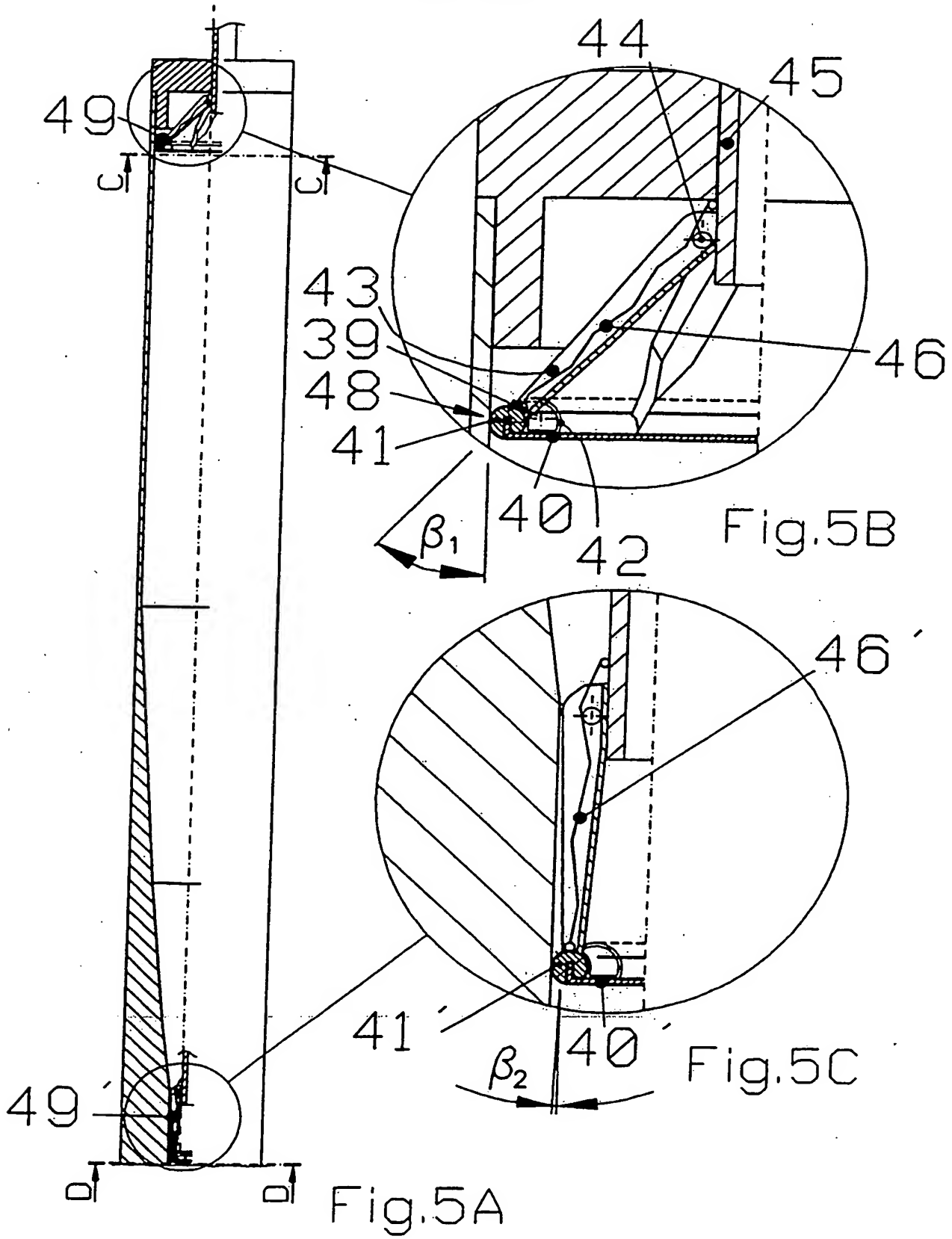


Fig.4F
section A-A


49
J
J
44
45
43
39
48
41
46
40
42
β1
Fig.5B
46´
41´
40´
β2
Fig.5C
49´
d
d
Fig.5A

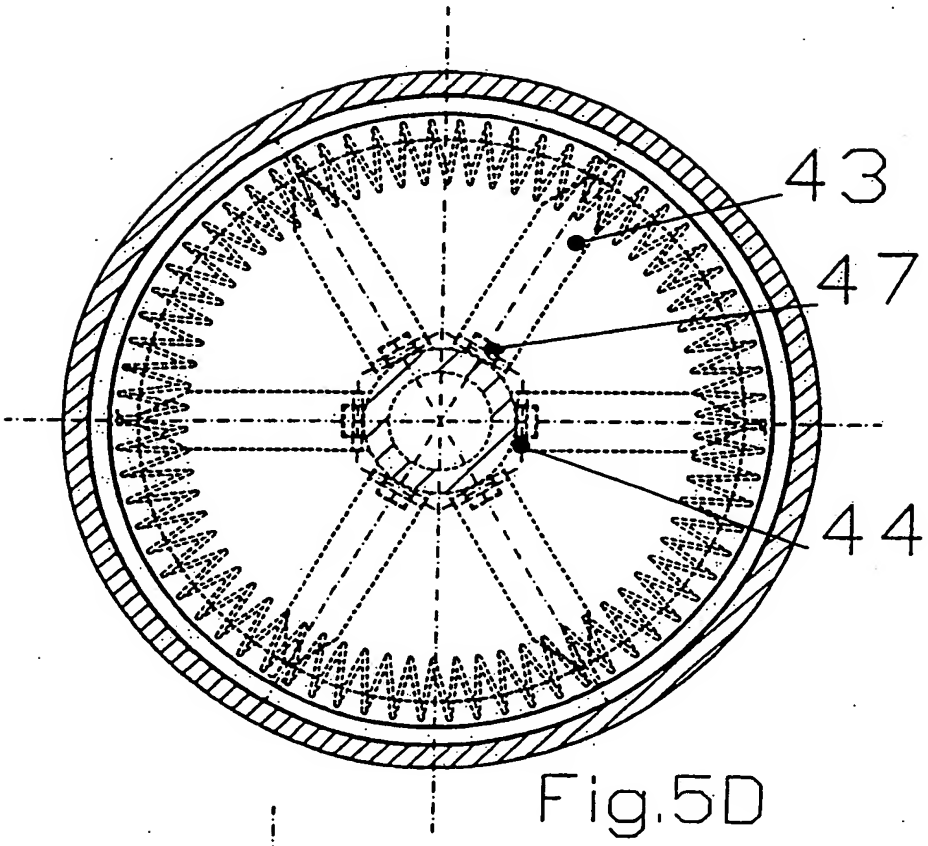


Fig.5D
section C-C

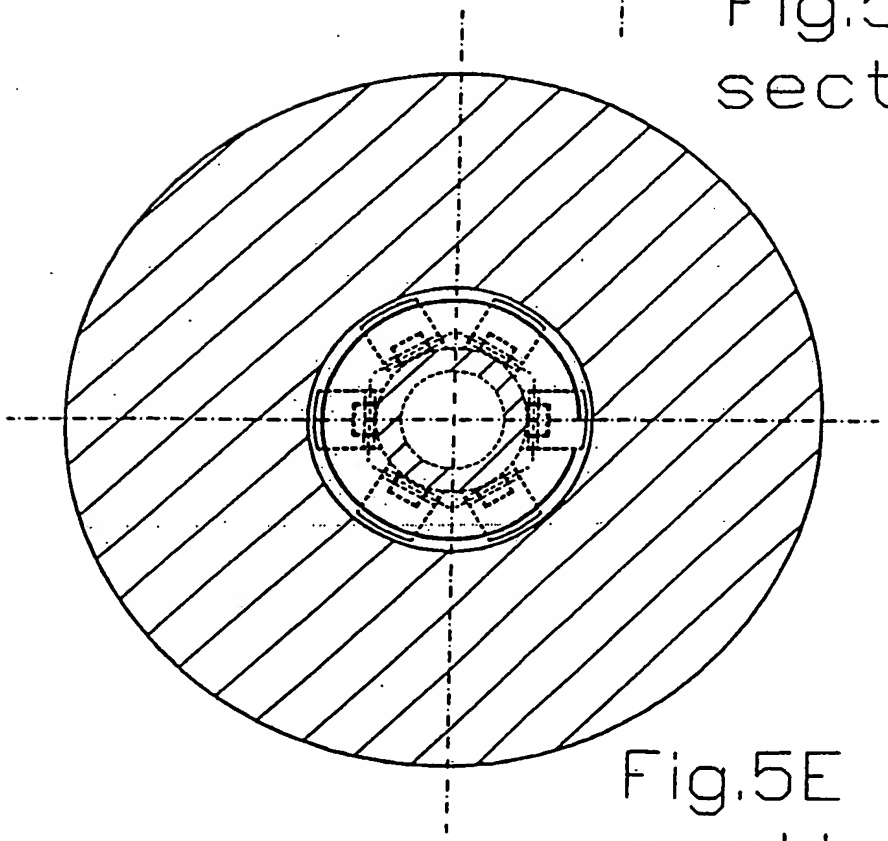


Fig.5E
section D-D

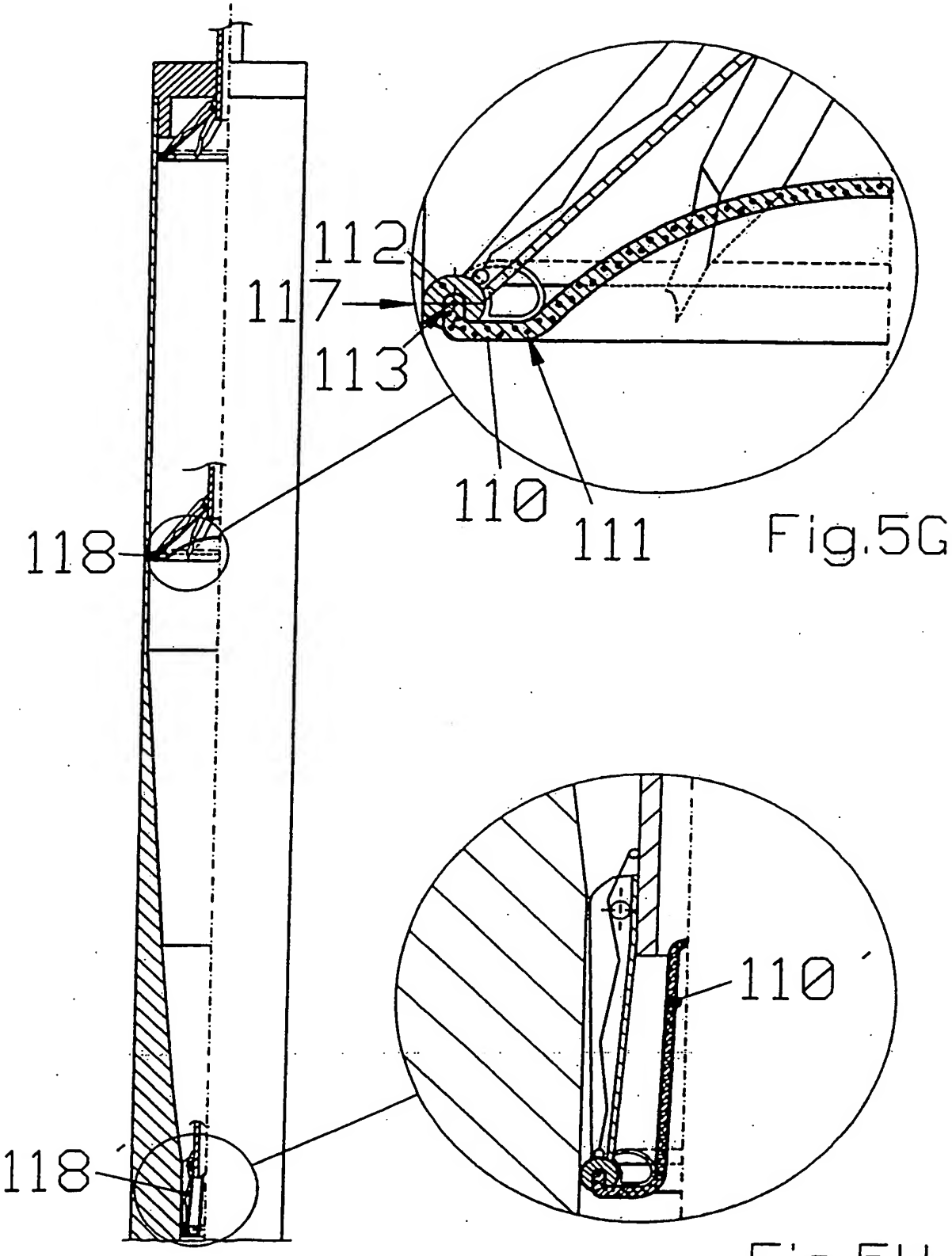


Fig.5G

Fig.5F

Fig.5H

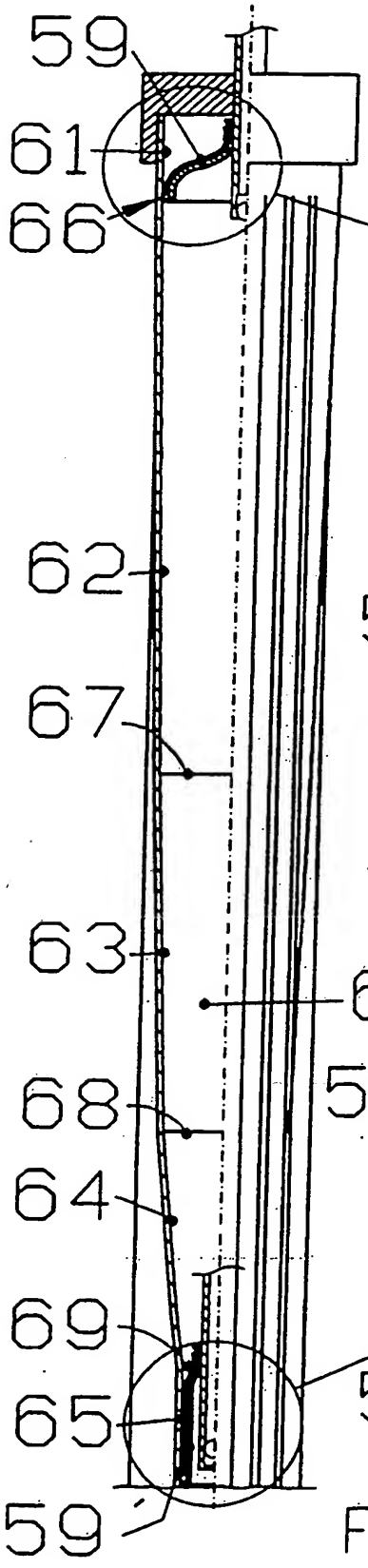


Fig.6A

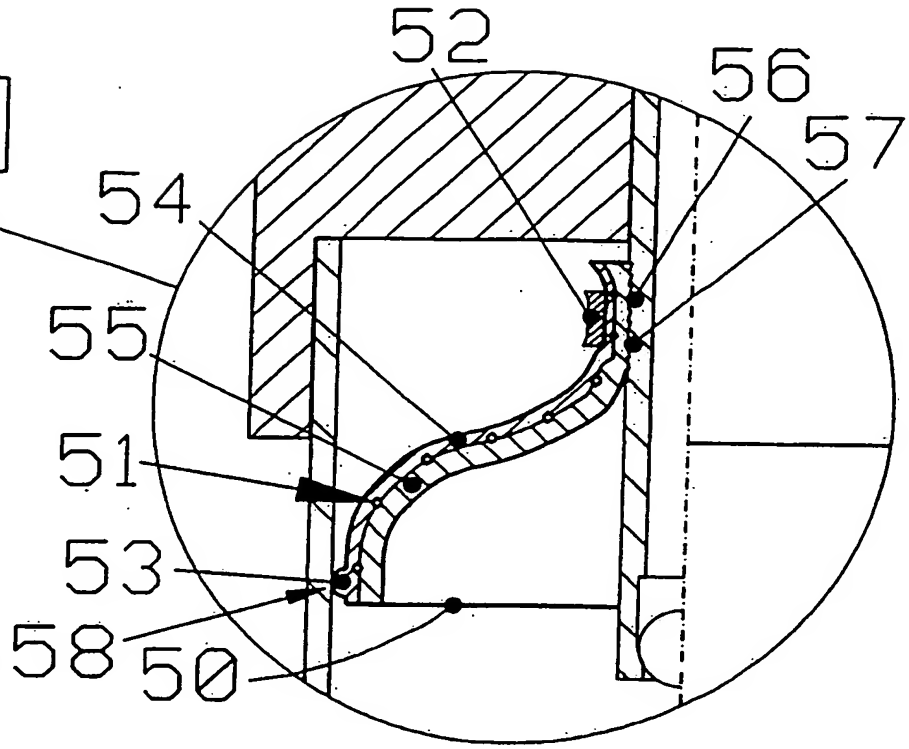


Fig.6B

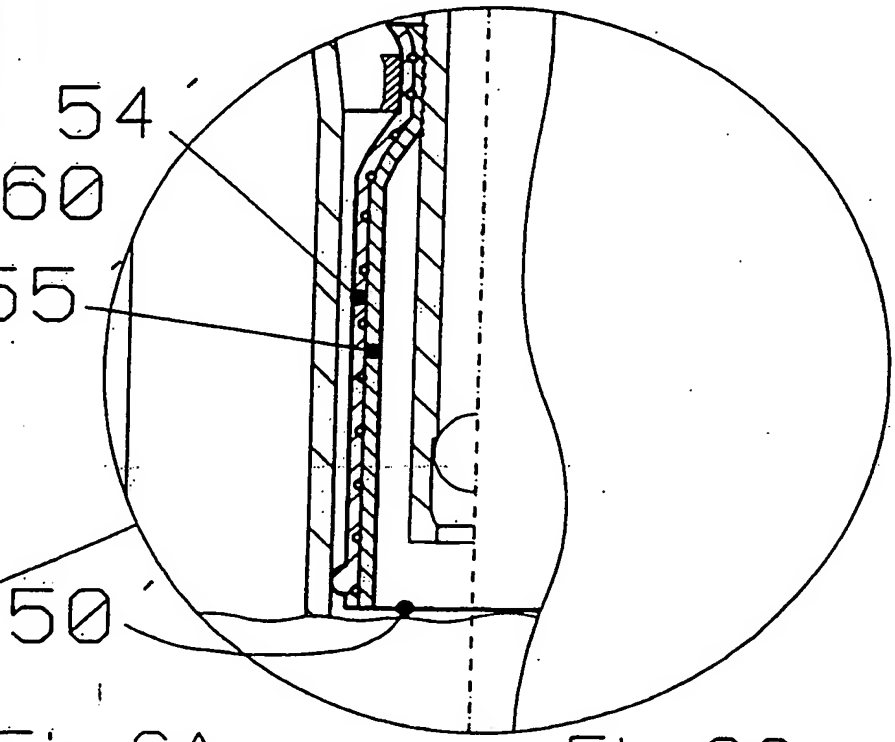


Fig.6C

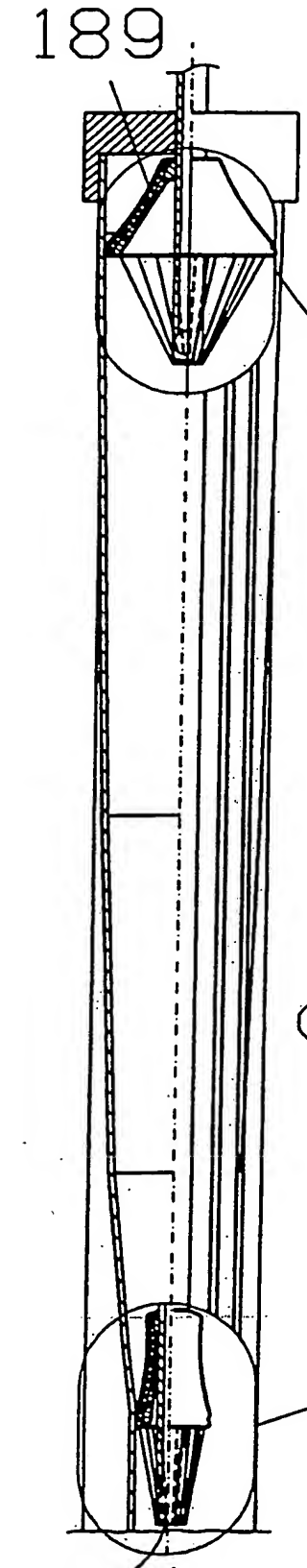


Fig.6D

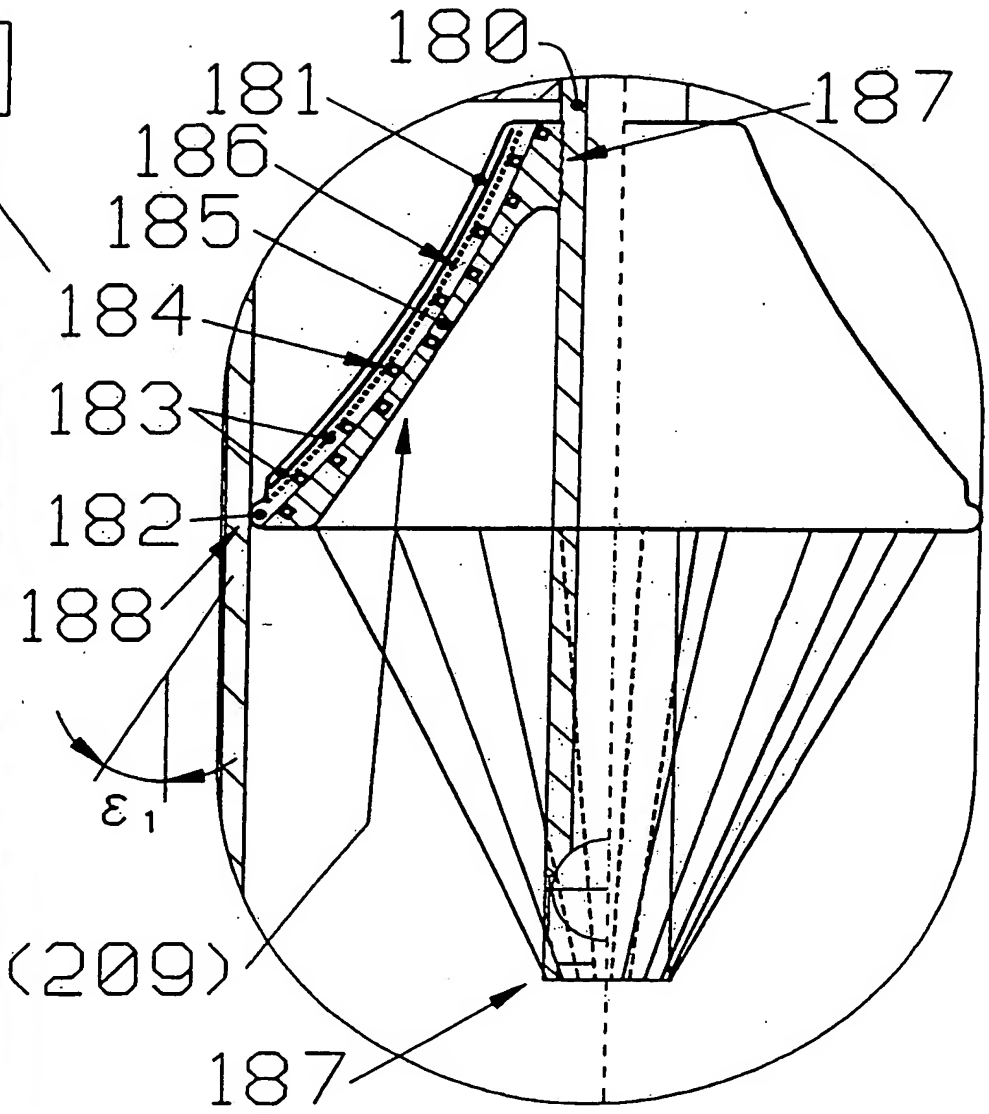


Fig.6E

Fig.6F

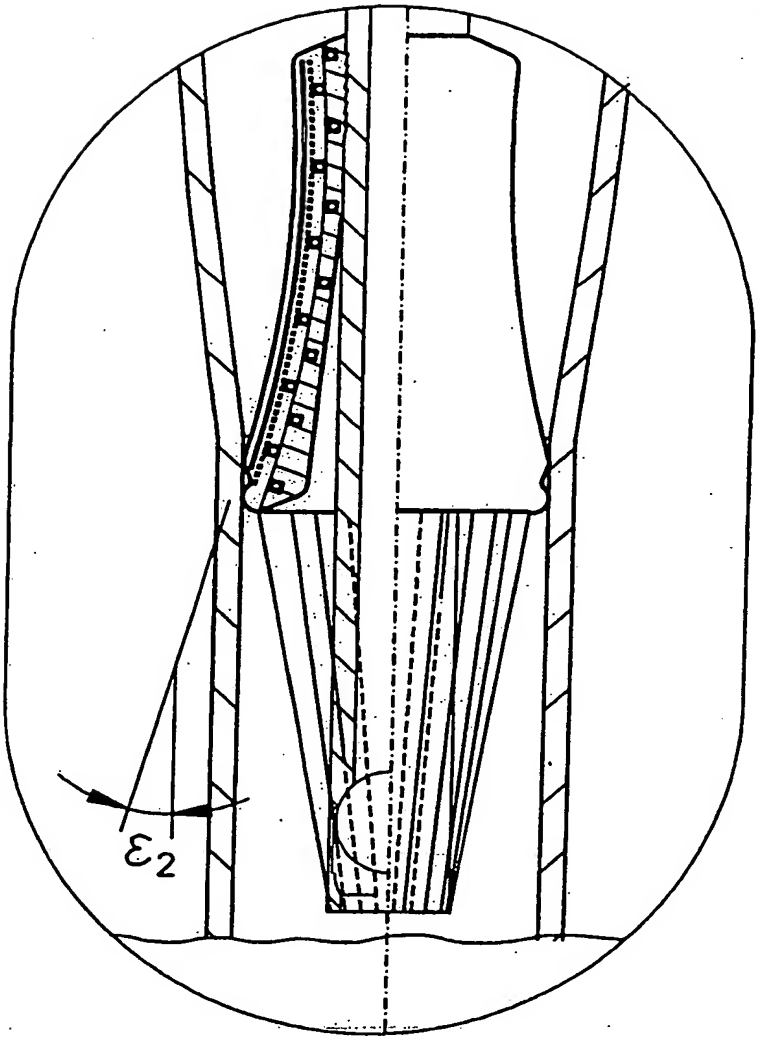


Fig.6F

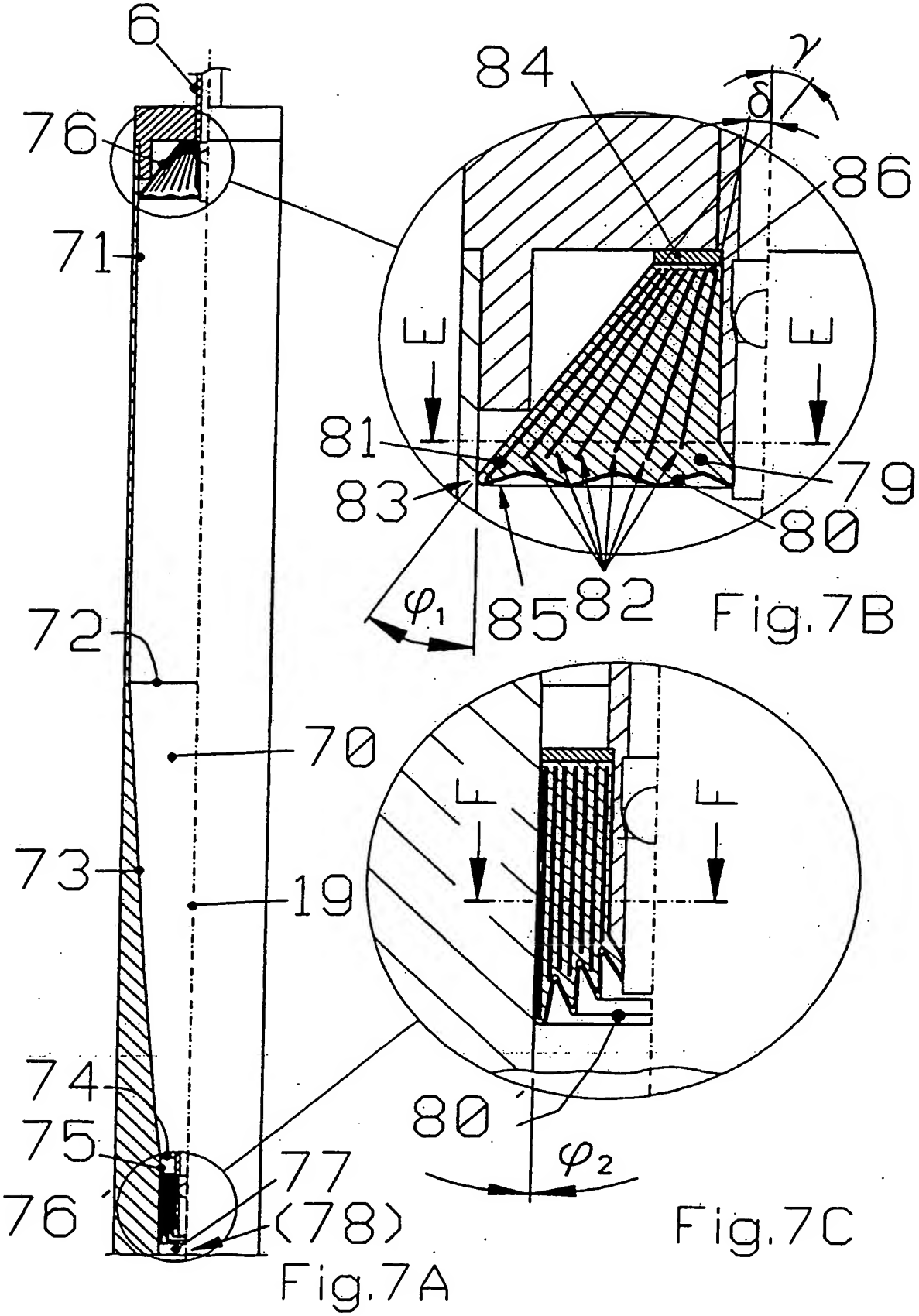


Fig.7A

Fig.7B

Fig.7C

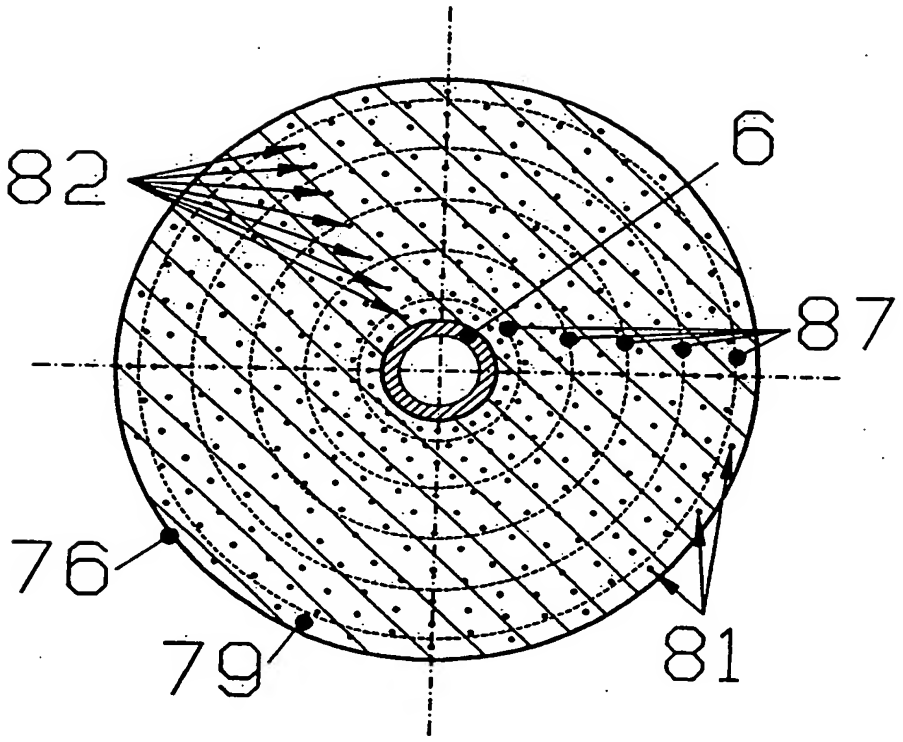


Fig.7D
section E-E

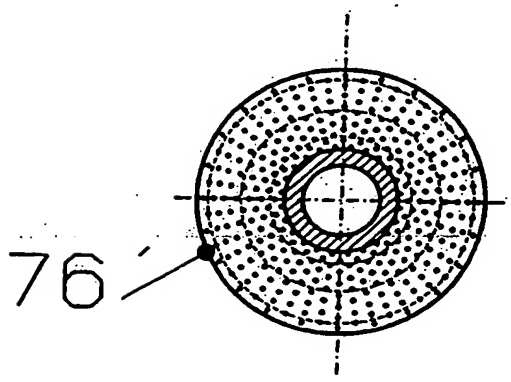
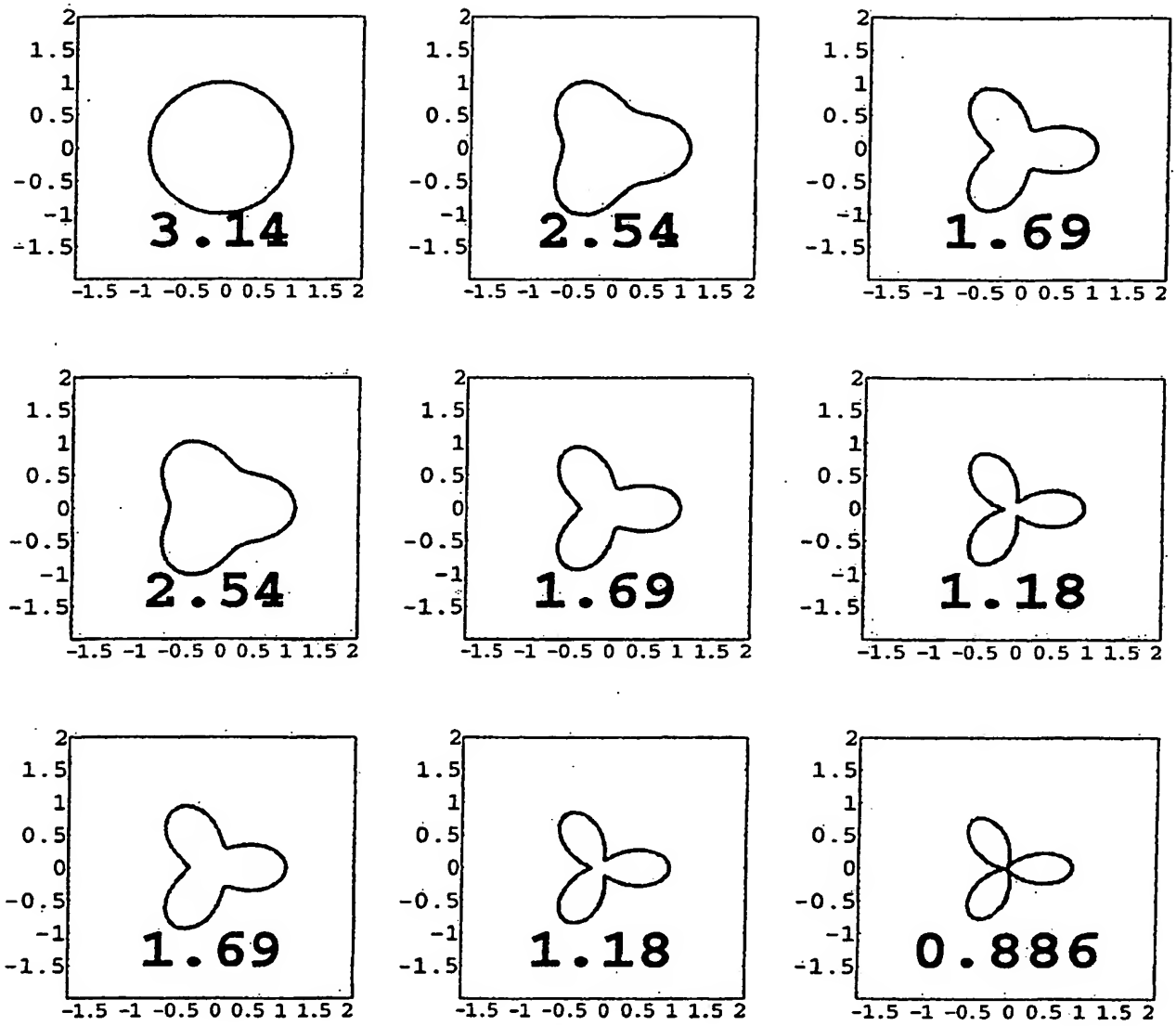


Fig.7E
section F-F



$\frac{c_0}{2}=1$ p=0, 0.25, 0.5

$c_1=0$

$c_2=0$ q=0, 0.25, 0.5

$c_3=p+q$

Fig.7F

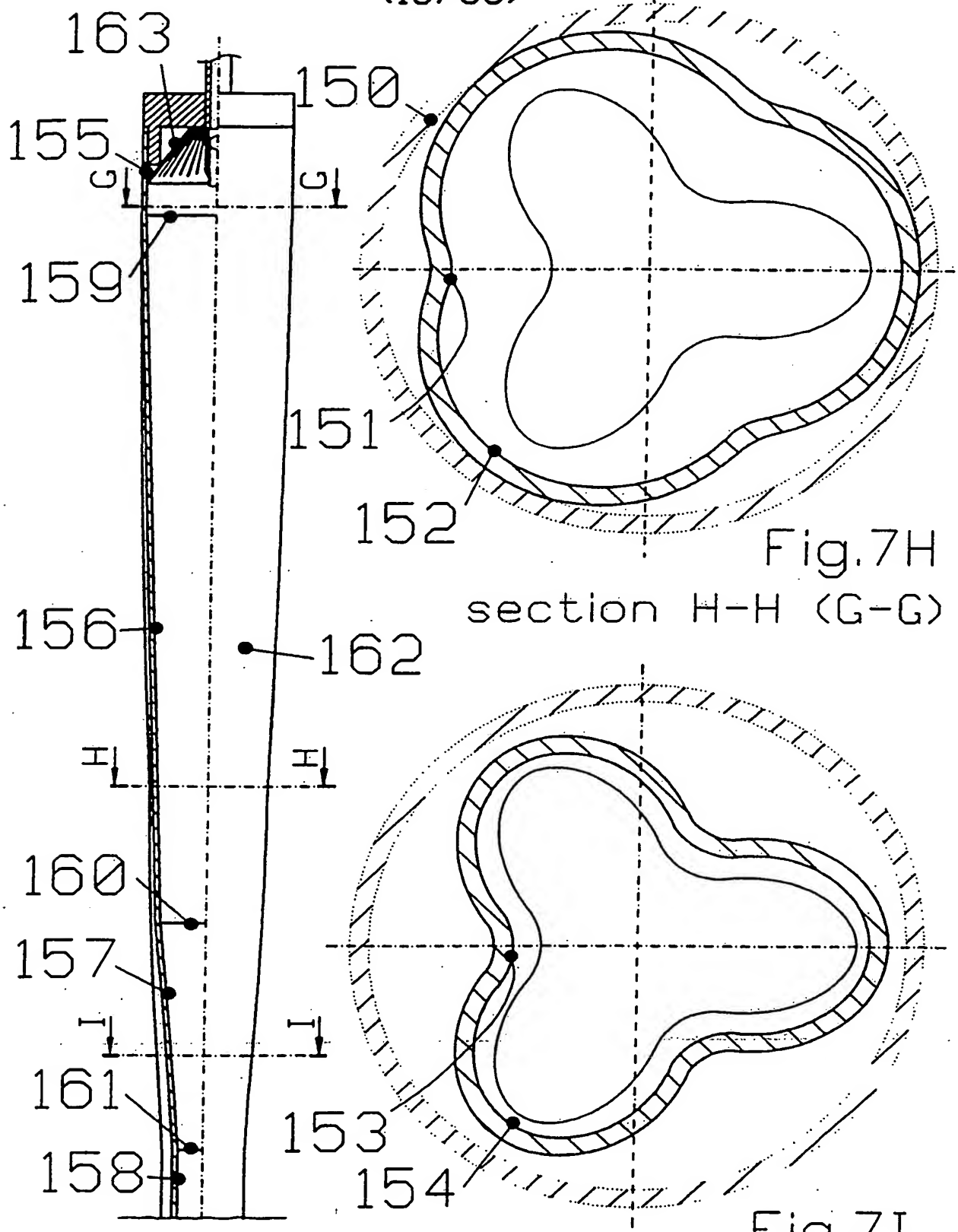


Fig.7H
section H-H (G-G)

Fig.7G

Fig.7I
section I-I (G-G)

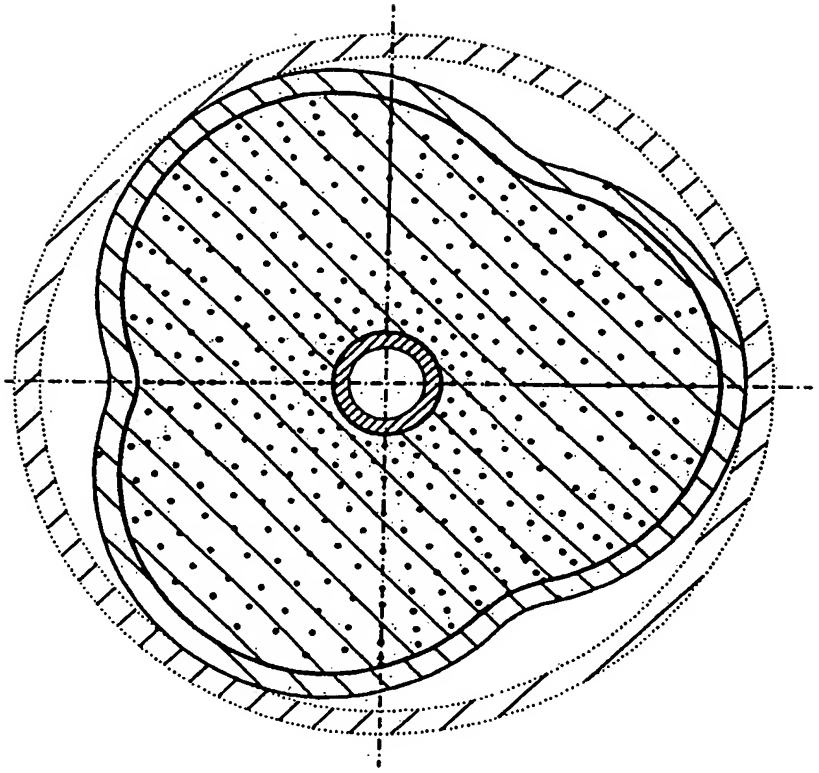
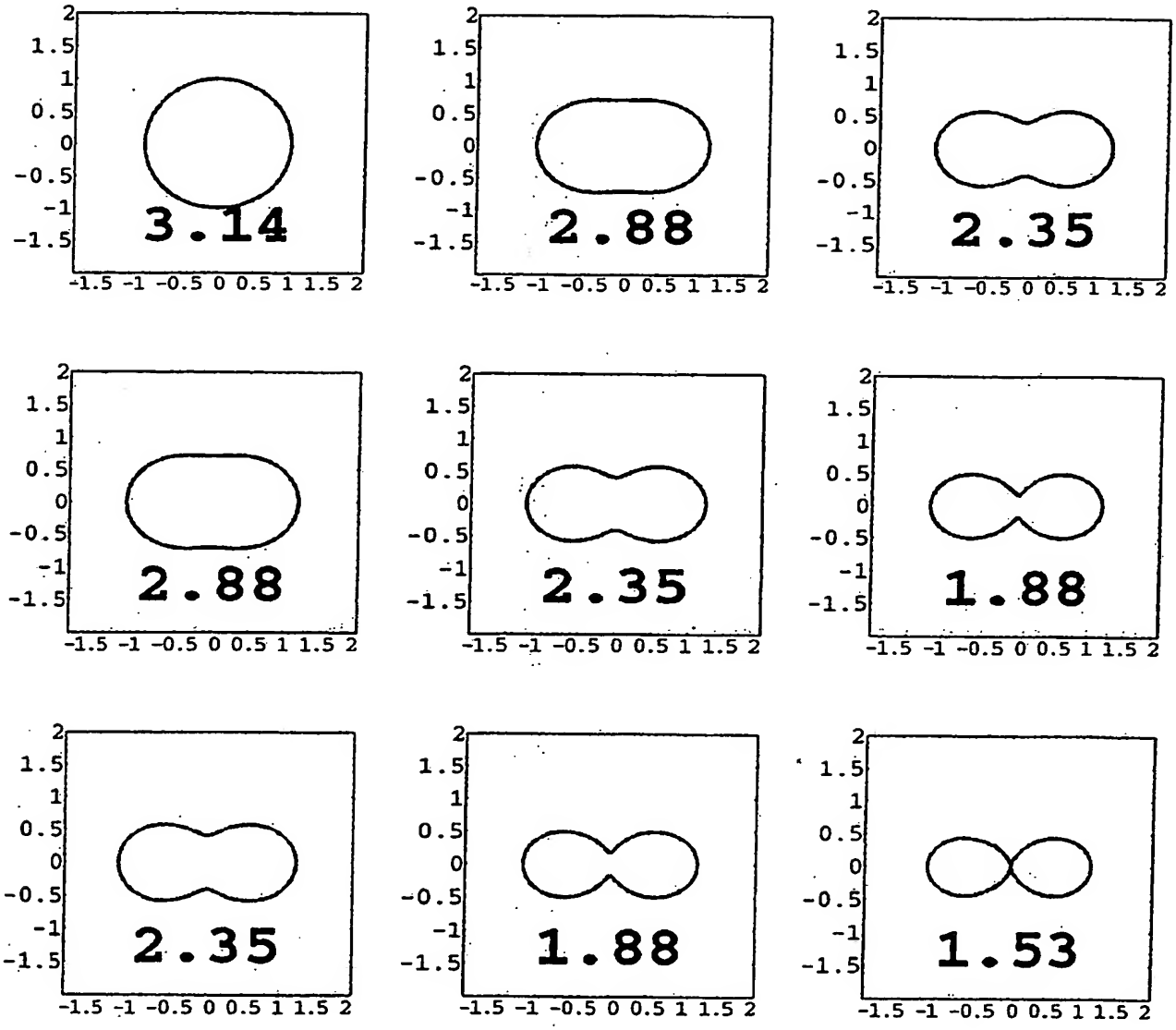


Fig.7J

section H-H (G-G)



$\frac{c_0}{2}=1$ p=0, 0.25, 0.5

$c_1=0$

$c_2=p+q$ q=0, 0.25, 0.5

Fig.7K

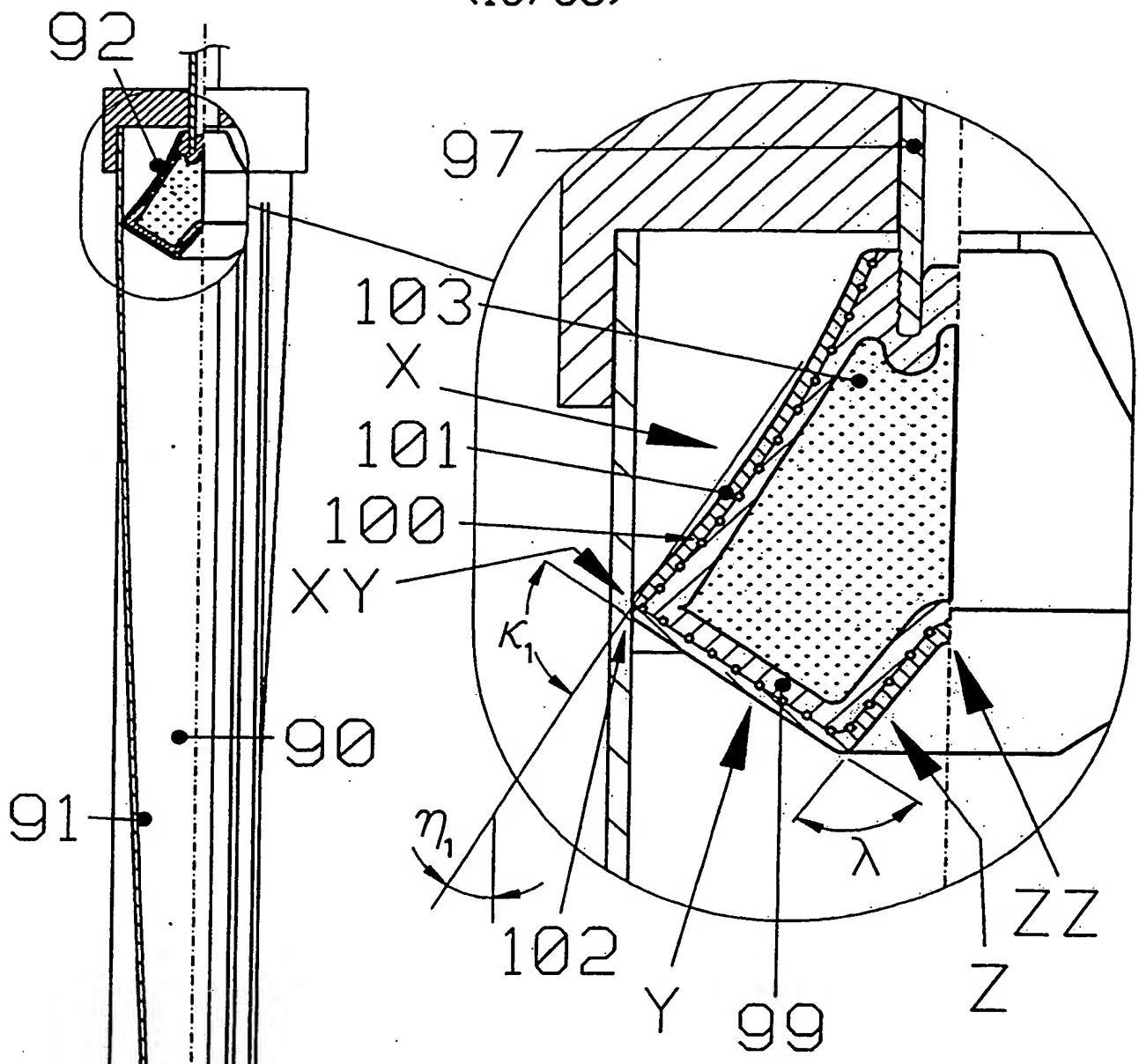


Fig.8B

FIG.8C

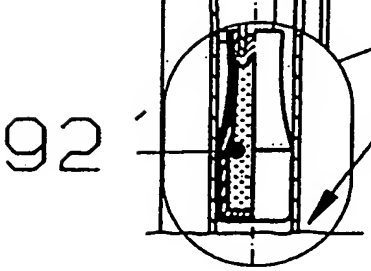


Fig.8A

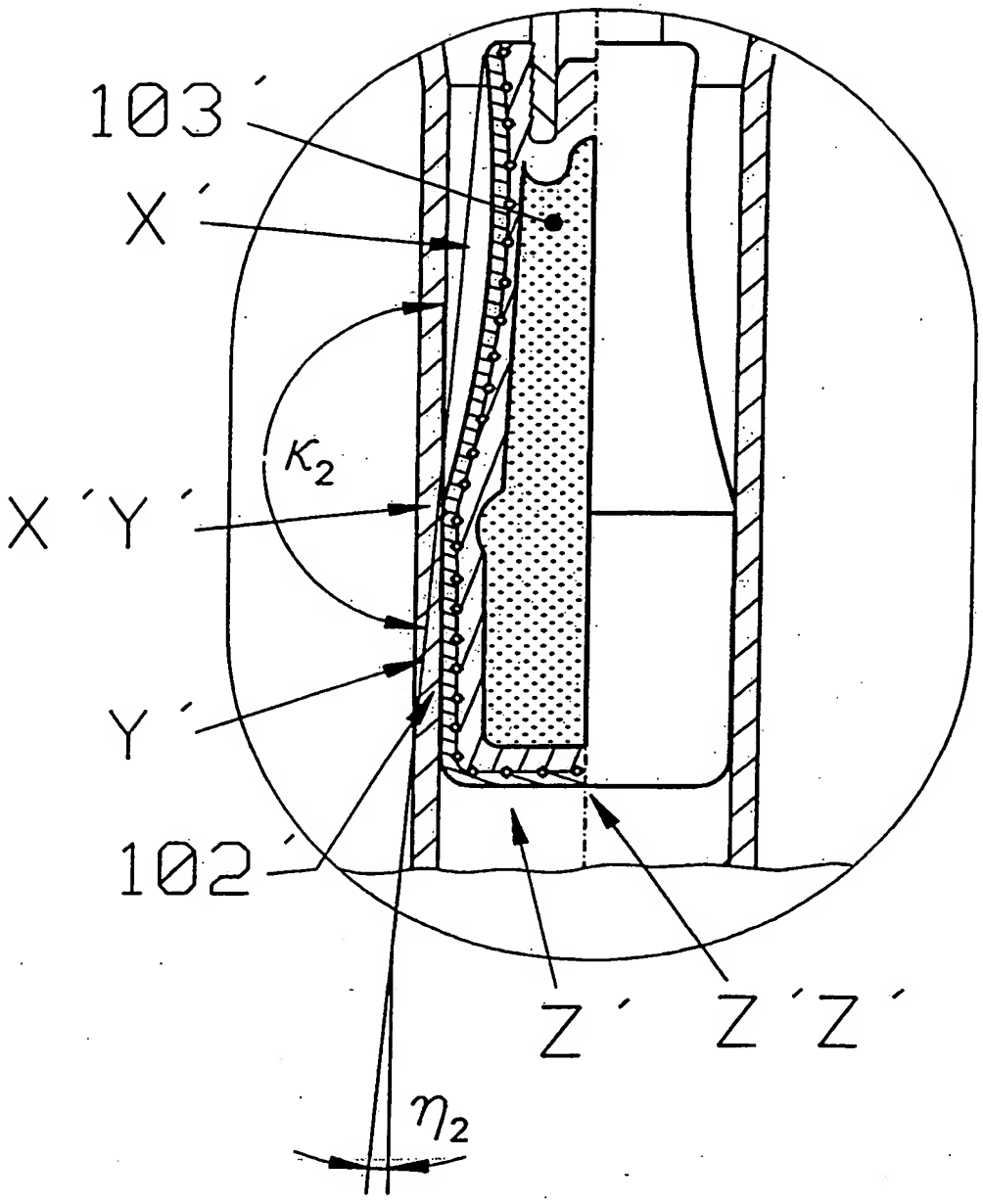


Fig.8C

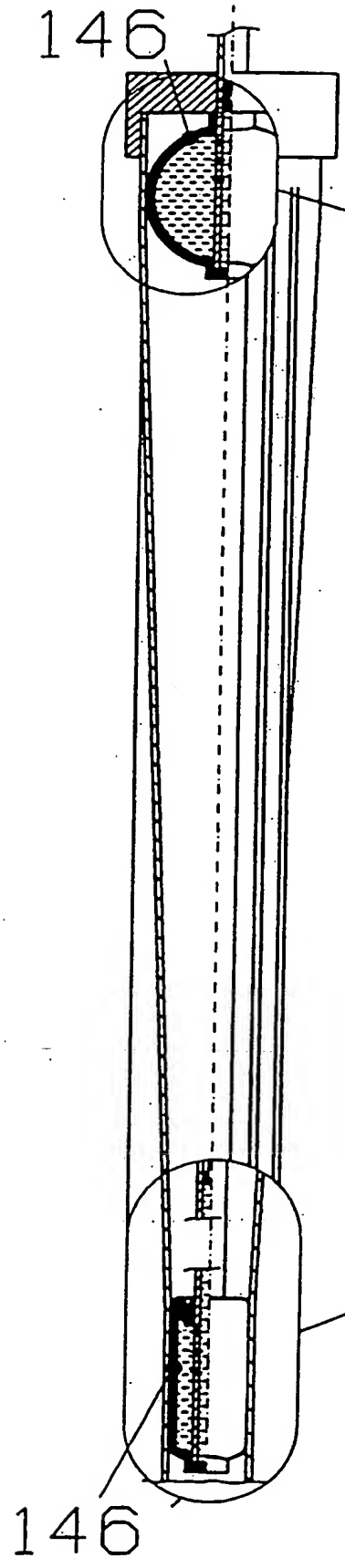


Fig.9A

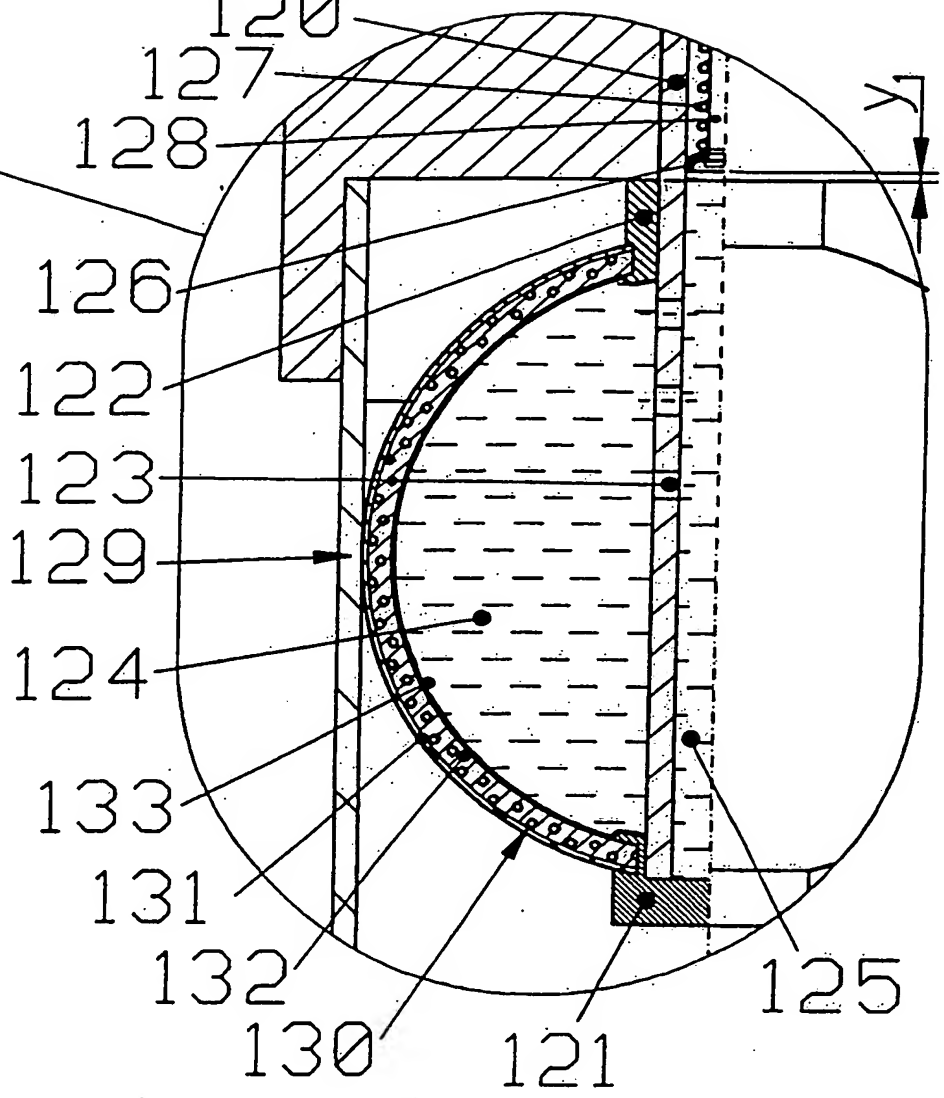


Fig.9B

FIG.9C

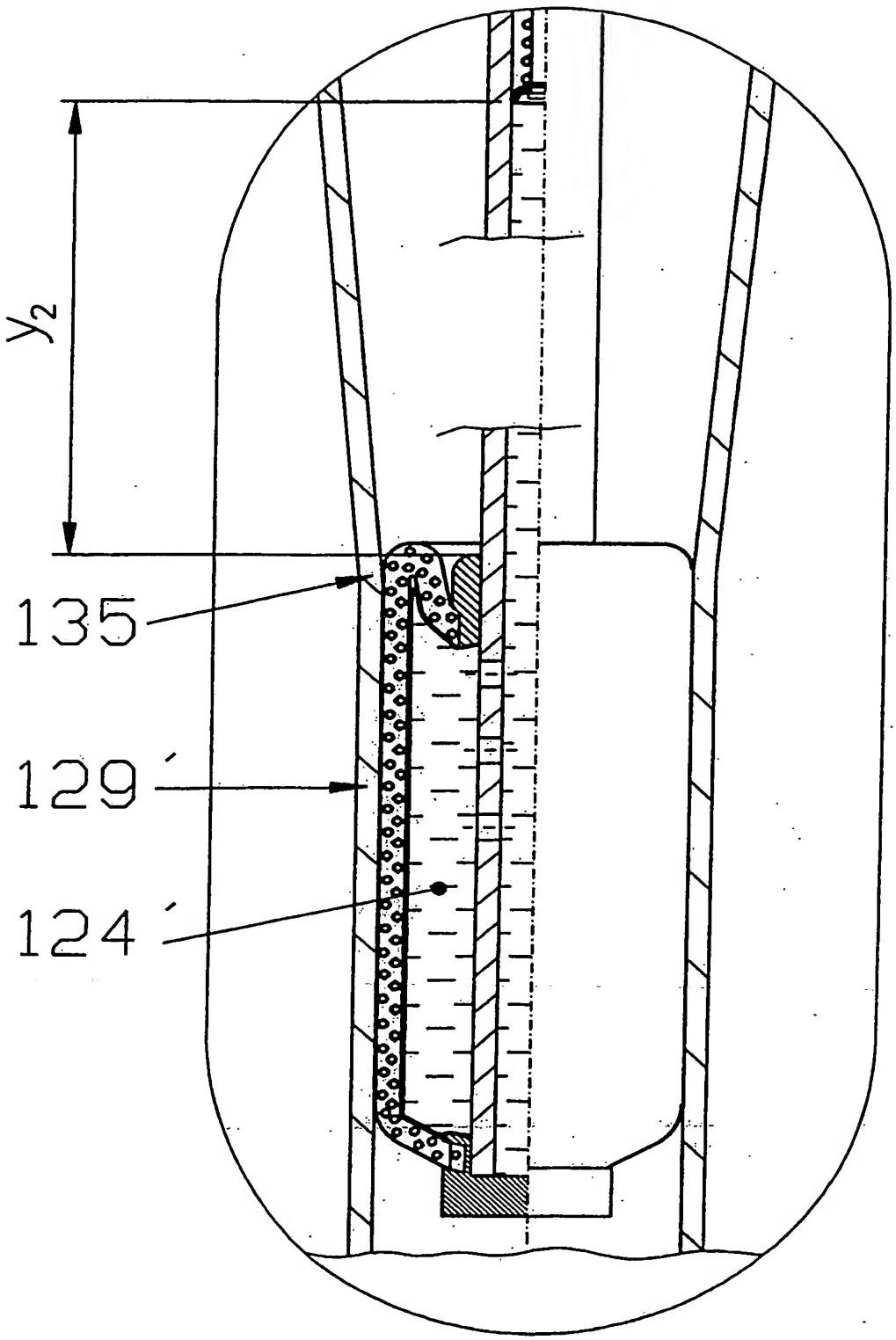


Fig.9C

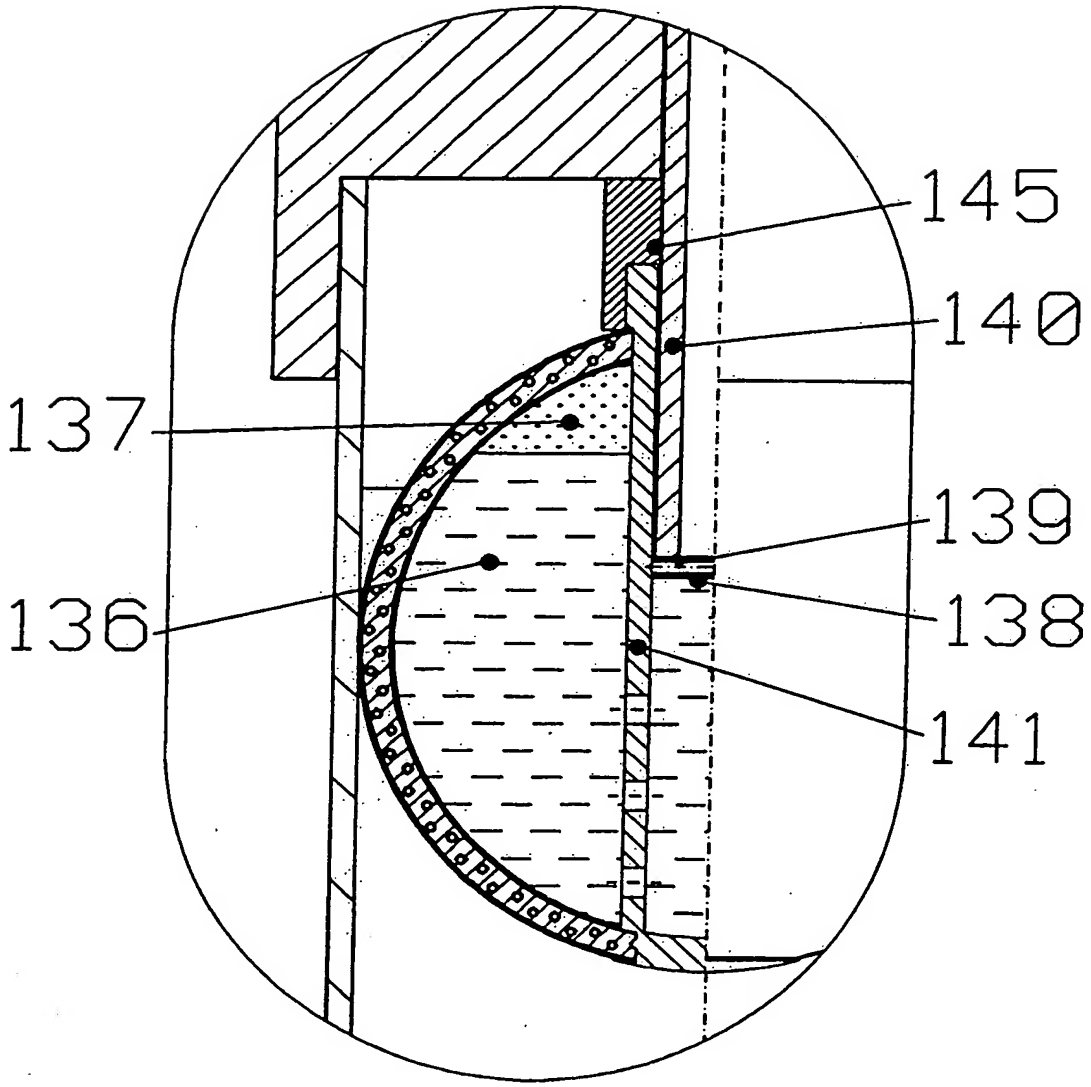


Fig.9D

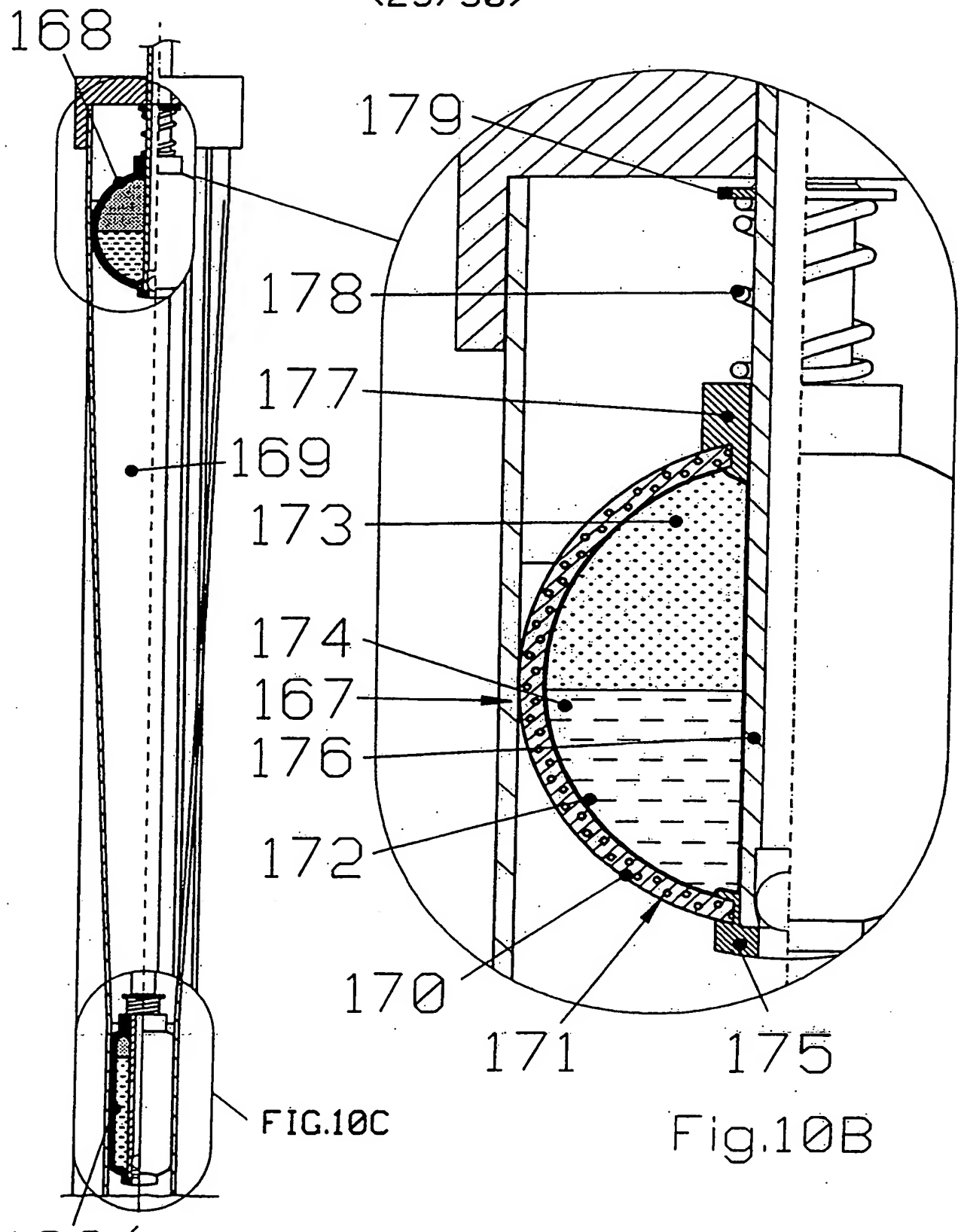


FIG.10C

Fig.10B

Fig.10A

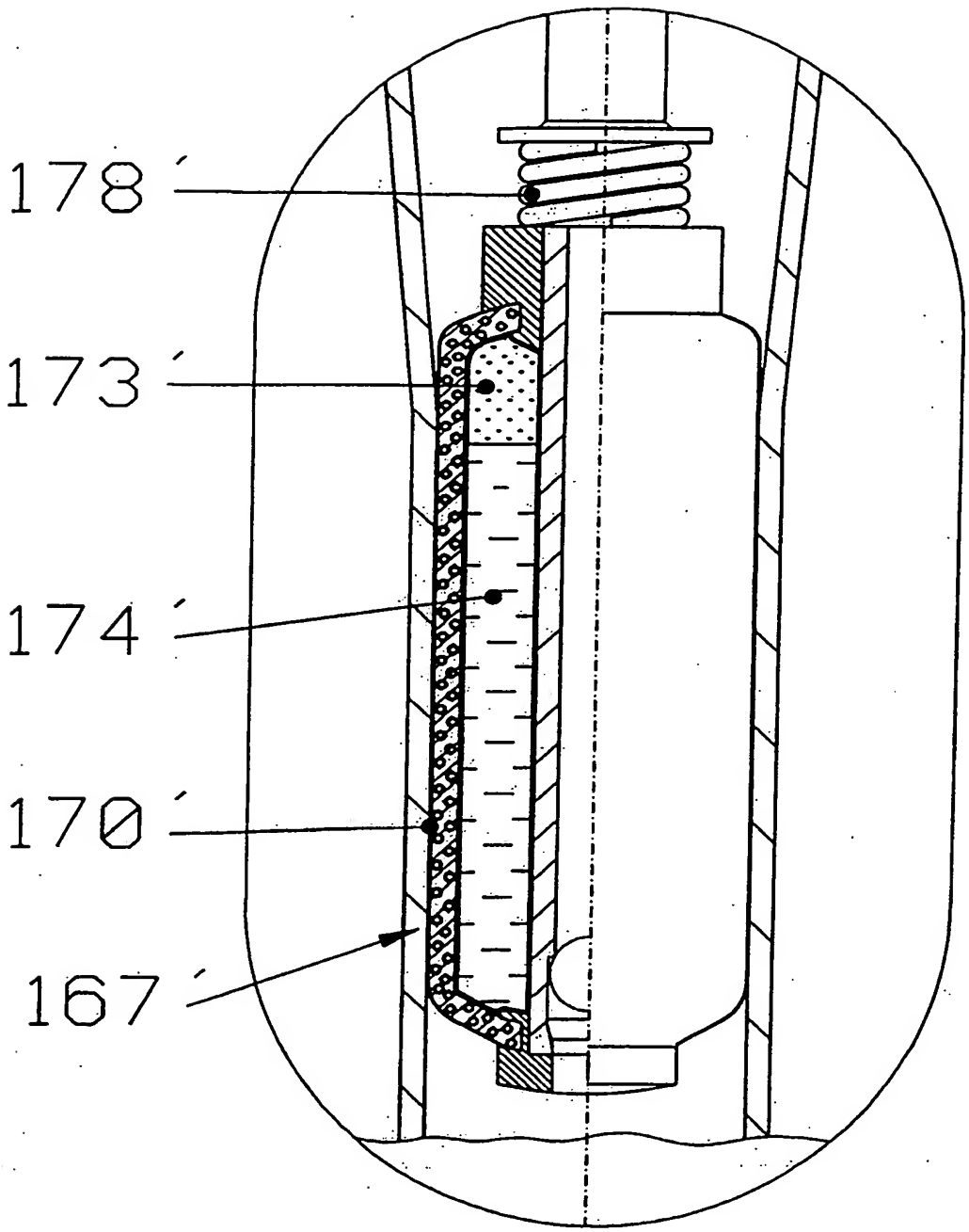


Fig.10C

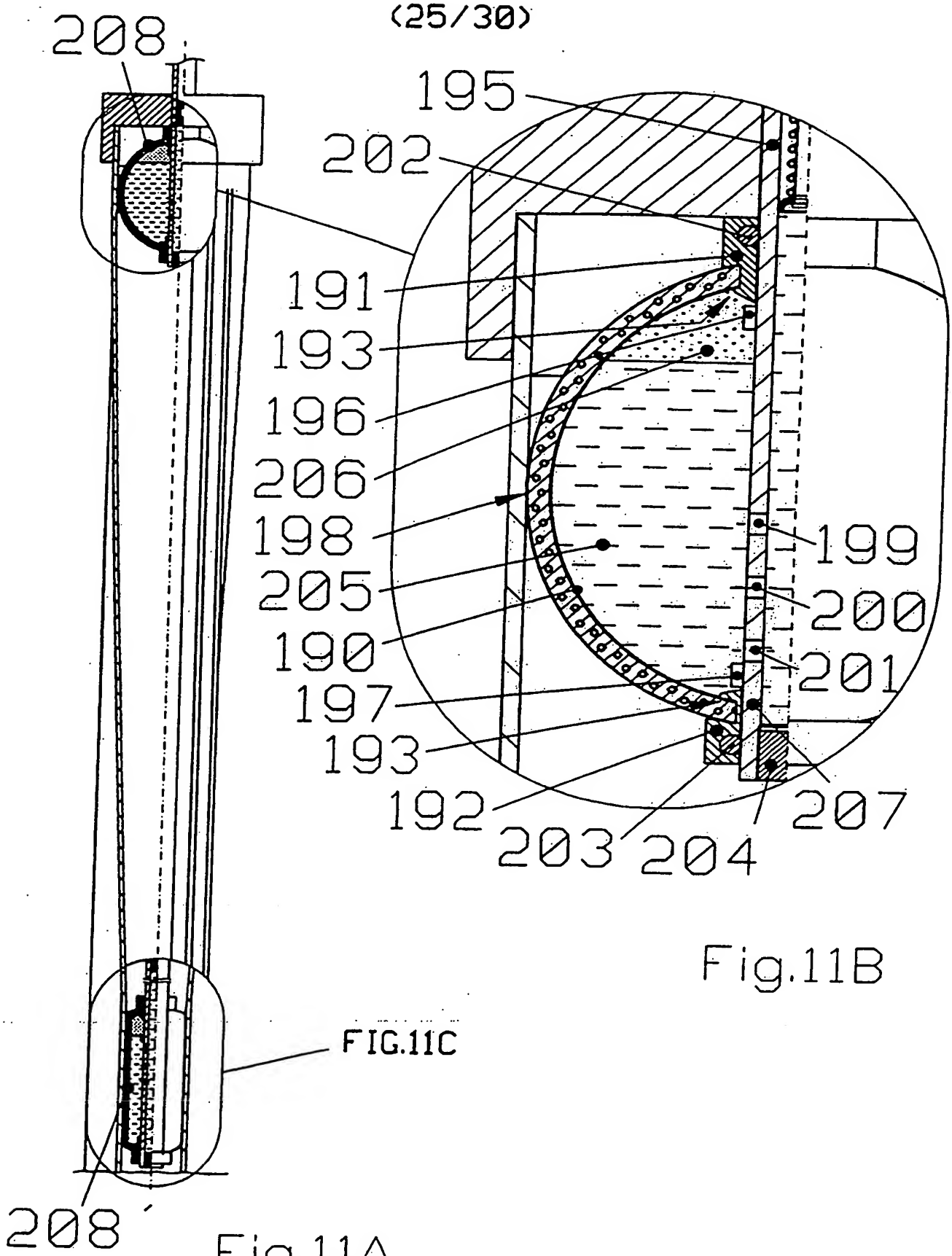


Fig.11B

FIG.11C

Fig.11A

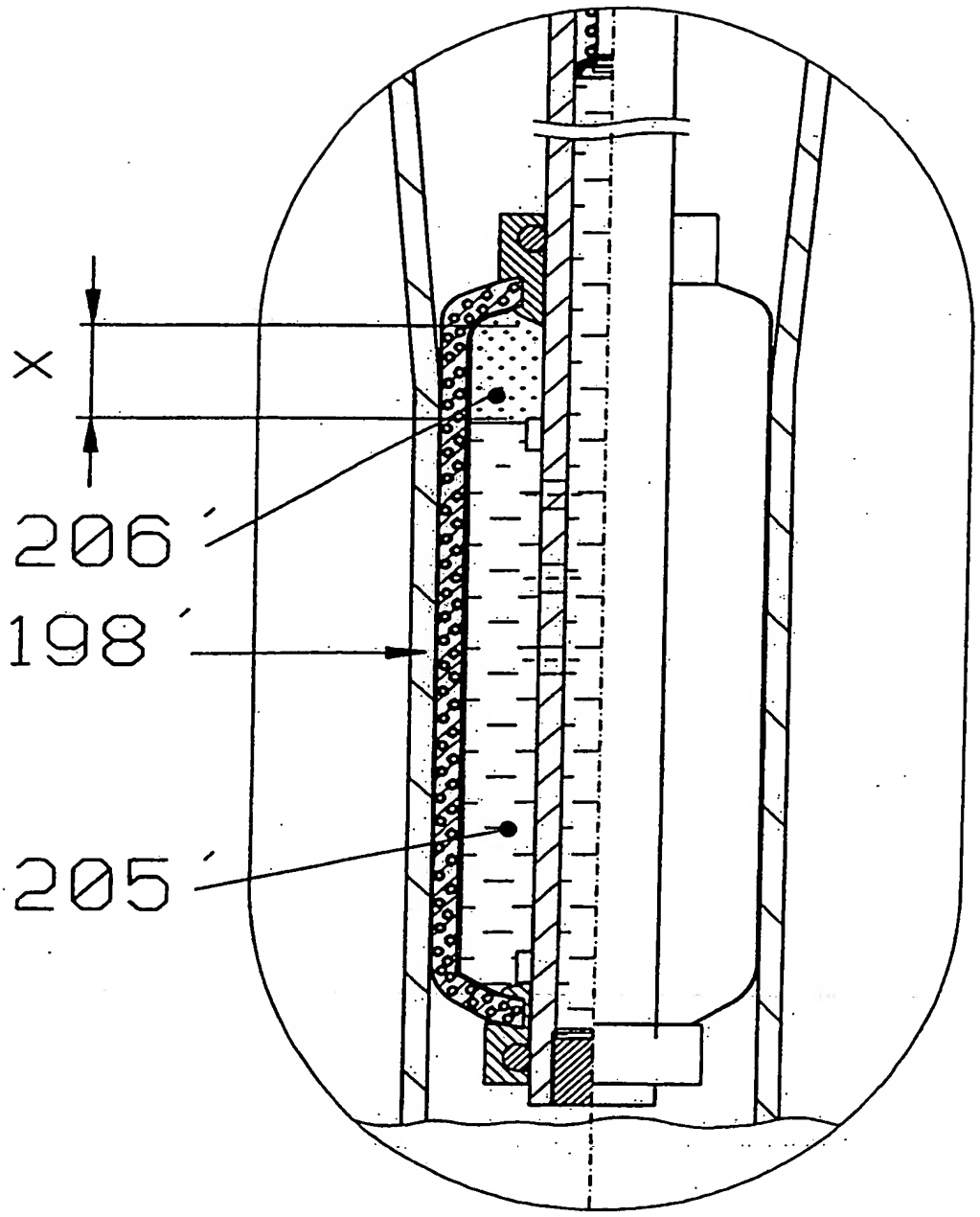


Fig.11C

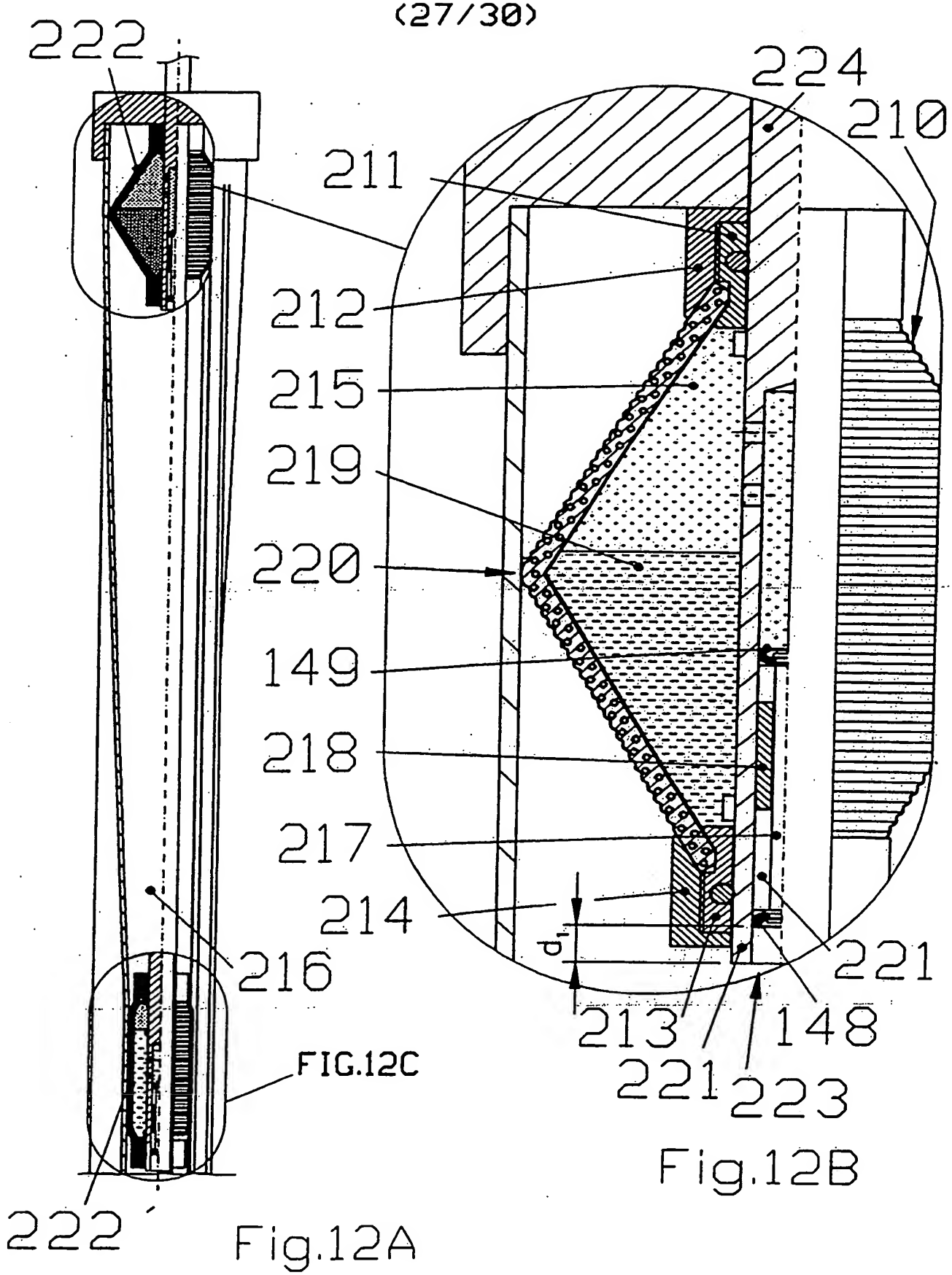


FIG.12C

Fig.12B

Fig.12A

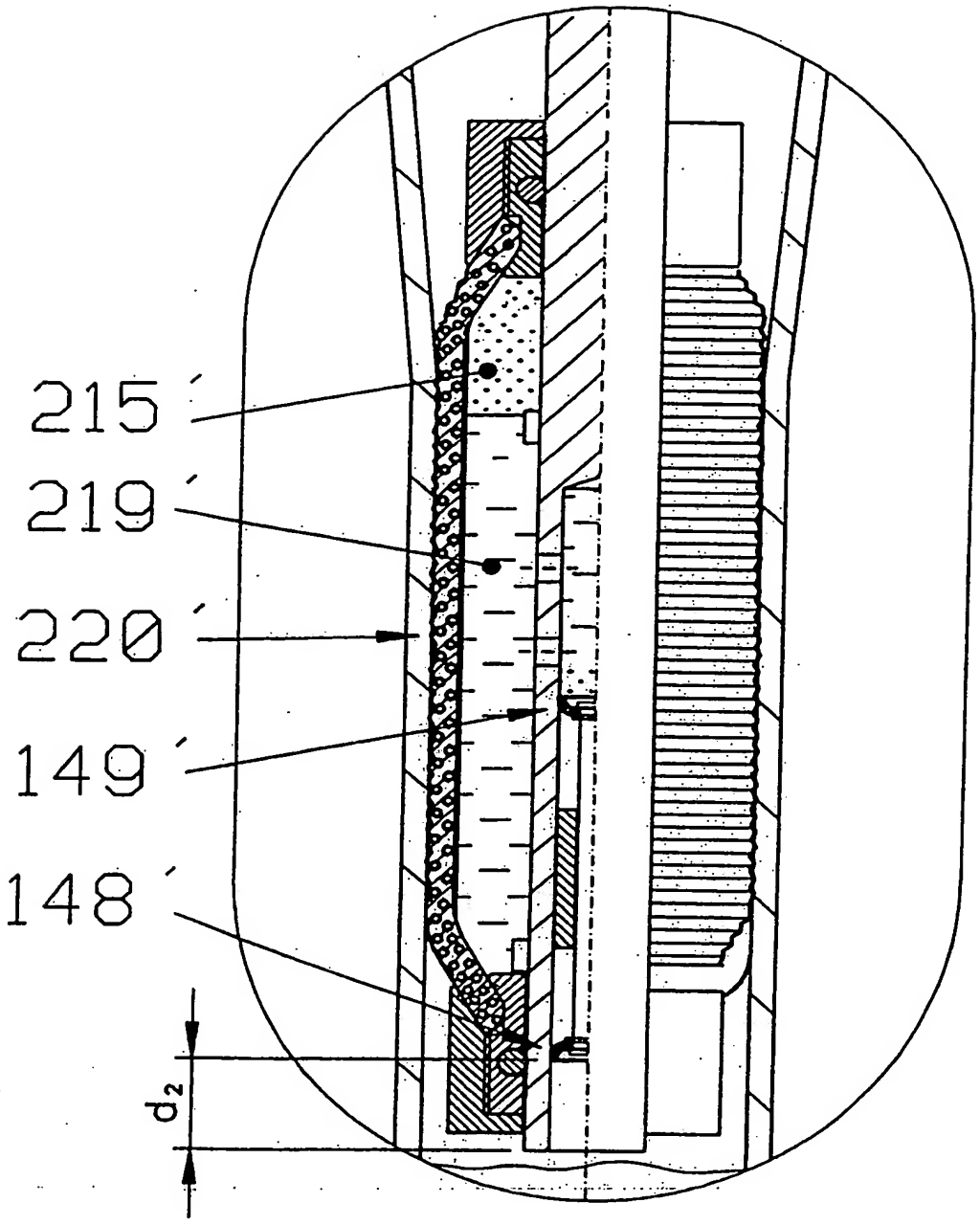


Fig.12C

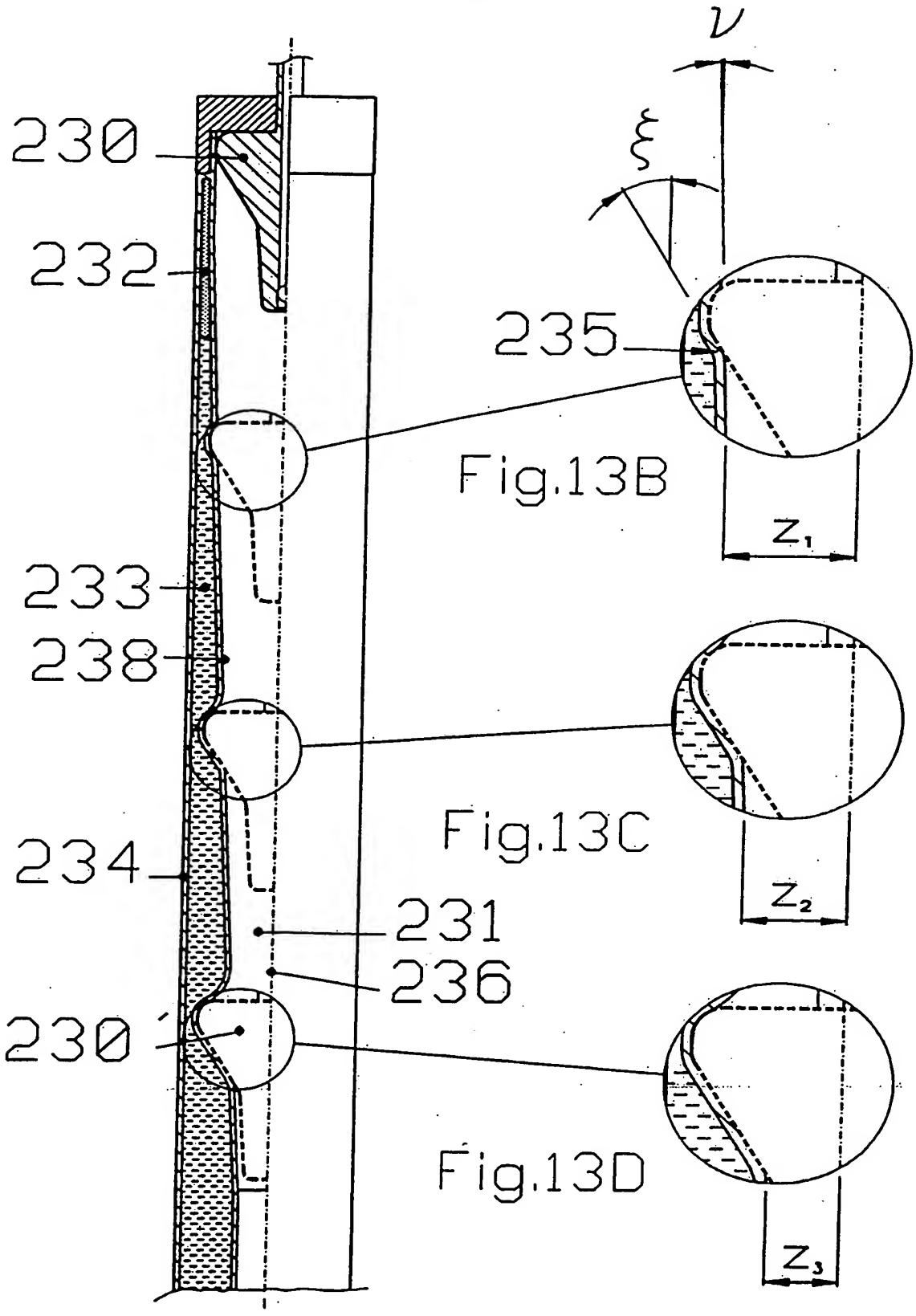


Fig.13B

Fig.13C

Fig.13D

Fig.13A

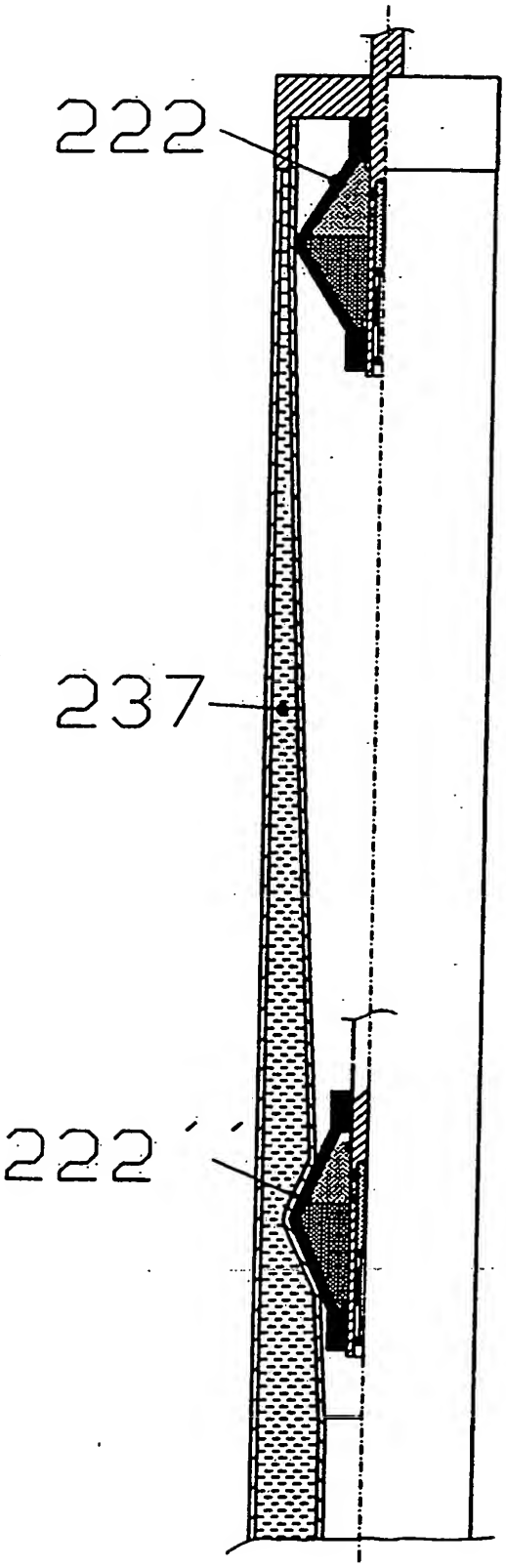


Fig.14

Reference numbers - A Device comprising a Chamber and a Piston

1	chamber (pressurizing)	Fig.	3	A
2	wall section	Fig.	3	A
3	wall section	Fig.	3	A
4	wall section	Fig.	3	A
5	wall section	Fig.	3	A
6	piston rod	Fig.	3	A
7	cap	Fig.	3	A
8	sealing portion	Fig.	3	B
8'	sealing portion	Fig.	3	C
9	loading portion	Fig.	3	B
9'	loading portion	Fig.	3	C
9.1	segment	Fig.	3	B
9.2	segment	Fig.	3	B
9.3	segment	Fig.	3	B
10	support portion	Fig.	3	B
11	locking means	Fig.	3	B
12	inlet	Fig.	3	B
13	valve	Fig.	3	B
14	outlet channel	Fig.	3	C
15	means	Fig.	3	C
16	transition	Fig.	3	A
17	transition	Fig.	3	A
18	transistion	Fig.	3	A
19	central axis	Fig.	3	A
20	piston	Fig.	3	A
20'	piston	Fig.	3	A
21	chamber (pressurizing)	Fig.	4	A
22	cooling ribs	Fig.	4	A
23	piston rod	Fig.	4	A
24	cap	Fig.	4	A
25	sealiong portion	Fig.	4	B
25'	sealing means	Fig.	4	C
26	means	Fig.	4	B*
27	part (of piston rod)	Fig.	4	B
28	support portion	Fig.	4	B
29	ring	Fig.	4	B
30	axis	Fig.	4	B
31	loading portion	Fig.	4	B
32	hole	Fig.	4	B
33	stop surface	Fig.	4	C*
34	means	Fig.	4	C*
35	spring	Fig.	4	C
36	piston	Fig.	4	A

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36'	piston	Fig.	4	A
37	sealing edge	Fig.	3	B
38	sealing edge	Fig.	4	B
38'	sealing edge	Fig.	4	C
39	central axis	Fig.	5	B
40	sealing means	Fig.	5	B
40'	sealing means	Fig.	5	C
41	sealing means/O-ring	Fig.	5	B
41'	sealing means	Fig.	5	C
42	spring	Fig.	5	B
43	support means	Fig.	5	B
44	axis	Fig.	5	B
45	piston rod	Fig.	5	B
46	spring	Fig.	5	B
46'	spring	Fig.	5	C
47	bracket	Fig.	5	D
48	sealing edge	Fig.	3	B
49	piston	Fig.	3	A
49'	piston	Fig.	3	A
50	piston means	Fig.	6	B
50'	piston means	Fig.	6	C
51	reinforcement	Fig.	6	B
52	clamp	Fig.	6	B
53	protrusion	Fig.	6	B
54	cover	Fig.	6	B
54'	cover	Fig.	6	C
55	lining	Fig.	6	B
55'	lining	Fig.	6	C
56	rib	Fig.	6	B
57	rib	Fig.	6	B
58	sealing edge	Fig.	6	B
59	piston	Fig.	6	A
59	piston	Fig.	6	A
60	chamber (pressurizing)	Fig.	6	A
61	wall portion	Fig.	6	A
62	wall portion	Fig.	6	A
63	wall portion	Fig.	6	A
64	wall portion	Fig.	6	A
65	wall portion	Fig.	6	A
66	transition	Fig.	6	A
67	transition	Fig.	6	A
68	transition	Fig.	6	A
69	transition	Fig.	6	A
70	chamber (pressurizing)	Fig.	7	A
71	portion (cylindrical)	Fig.	7	A
72	transition	Fig.	7	A

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73	portion (concave curve)	Fig.	7	A
74	transition	Fig.	7	A
75	portion (cylindrical)	Fig.	7	A
76	piston	Fig.	7	A
76'	piston	Fig.	7	C
77	outlet channel	Fig.	7	C
78	check valve	Fig.	7	A
79	loading means/material	Fig.	7	D
80	sealing means	Fig.	7	B
80'	sealing means	Fig.	7	C
81	stiffener	Fig.	7	B
82	stiffener	Fig.	7	B
83	sealing edge	Fig.	7	B
84	support means	Fig.	7	B
85	fold	Fig.	7	B
86	joint	Fig.	7	B
87	folds	Fig.	7	C
90	chamber (pressurizing)	Fig.	8	A
91	portion (convex curve)	Fig.	8	A
92	piston	Fig.	8	A
92'	piston	Fig.	8	A
93	outlet channel	Fig.	8	A
94	inlet channel	Fig.	8	A
95	check valve	Fig.	8	A
96	check valve	Fig.	8	A
97	piston rod	Fig.	8	B
99	lining	Fig.	8	B
100	reinforcement	Fig.	8	B
101	cover	Fig.	8	B
102	sealing edge	Fig.	8	B
102'	sealing edge	Fig.	8	C
103	medium (compressable)	Fig.	8	B
103'	medium (compressable)	Fig.	8	C
110	skin	Fig.	5	G
110'	skin	Fig.	5	H
111	fibers	Fig.	5	G
112	sealing portion	Fig.	5	G
113	spring-force ring	Fig.	5	G
114	ring	Fig.	5	G
117	sealing edge	Fig.	9	C
118	piston	Fig.	5	F
118'	piston	Fig.	5	F
120	piston rod	Fig.	9	B
121	cap	Fig.	9	B
122	cap	Fig.	9	B
123	hole	Fig.	9	B

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124	medium (incompressable)	Fig.	9	B
124'	medium (incompressable)	Fig.	9	C
125	channel (hollow)	Fig.	9	B
126	piston (movable)	Fig.	9	B
127	spring	Fig.	9	B
128	piston rod (**)	Fig.	9	B
129	sealing edge	Fig.	9	B
130	fibers	Fig.	9	B
131	cover	Fig.	9	B
132	liner	Fig.	9	B
133	bladder (impervious)	Fig.	9	B
135	shoulder	Fig.	9	C
136	medium (incompressable)	Fig.	9	D
137	medium (compressable)	Fig.	9	D
138	piston	Fig.	9	D
138'	piston	Fig.	9	D
139	ring (sealing)	Fig.	9	D
140	piston rod	Fig.	9	D
141	cylinder	Fig.	9	D
145	stop	Fig.	9	D
146	piston	Fig.	9	A
146'	piston	Fig.	9	A
148	piston (movable)	Fig.	12	B
148'	piston (movable)	Fig.	12	C
149	piston (movable)	Fig.	12	B
149'	piston (movable)	Fig.	12	C
150	cross-section G-G	Fig.	7	H
151	transition	Fig.	7	H
152	cross-section H-H	Fig.	7	G
153	transition	Fig.	7	I
154	cross-section	Fig.	7	I
155	wall section	Fig.	7	G
156	wall section	Fig.	7	G
157	wall section	Fig.	7	G
158	wall section	Fig.	7	G
159	transition	Fig.	7	G
160	transition	Fig.	7	G
161	transition	Fig.	7	G
167	sealing edge	Fig.	10	B
167'	sealing edge	Fig.	10	B
168	piston	Fig.	10	A
168'	piston	Fig.	10	A
169	chamber (pressurizing)	Fig.	10	A
170	skin	Fig.	10	B
170'	skin	Fig.	10	C
171	fibers	Fig.	10	B

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172	layer (impervious)	Fig. 10 B
173	medium (compressable)	Fig. 10 B
173'	medium (compressable)	Fig. 10 c
174	medium (incompressable)	Fig. 10 B
174'	medium (incompressable)	Fig. 10 C
175	cap	Fig. 10 B
176	piston rod	Fig. 10 B
177	cap (movable)	Fig. 10 B
178	spring	Fig. 10 B
178'	spring	Fig. 10 C
179	stop	Fig. 10 B
180	piston rod	Fig. 6 E
181	cover	Fig. 6 E
182	protrusion	Fig. 6 E
183	spring-force member	Fig. 6 E
184	support means/fibers	Fig. 6 E
185	liner	Fig. 6 E
186	channels	Fig. 6 E
187	top (of the cone)	Fig. 6 E
188	sealing edge	Fig. 6 E
189	piston	Fig. 6 D
189'	piston	Fig. 6 D
190	layer (impervious)	Fig. 11 B
191	cap (movable)	Fig. 11 B
192	cap (movable)	Fig. 11 B
193	edge (tightly squeezed)	Fig. 11 B
194	edge (tightly squeezed)	Fig. 11 B
195	piston rod	Fig. 11 B
196	stop	Fig. 11 B
197	stop	Fig. 11 B
198'	sealing edge	Fig. 11 C
199	hole	Fig. 11 B
200	hole	Fig. 11 B
201	hole	Fig. 11 B
202	O-ring	Fig. 11 B
203	O-ring	Fig. 11 B
204	cap (not movable)	Fig. 11 B
205	medium (non-compressable)	Fig. 11 B
206	medium (compressable)	Fig. 11 B
207	wall	Fig. 11 B
208	piston	Fig. 11 A
208'	piston	Fig. 11 A
209	layer (impervious)	Fig. 6 E
210	rib	Fig. 12 B
211	part (inner)	Fig. 12 B
212	part (outer)	Fig. 12 B

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213	part (inner)	Fig.	12	B
214	part (outer)	Fig.	12	B
215	medium (compressable)	Fig.	12	B
215'	medium (compressable)	Fig.	12	C
216	chamber	Fig.	12	A
217	piston rod (**)	Fig.	12	B
218	bearing (slide)	Fig.	12	B
219	medium (non-compressable)	Fig.	12	B
219	medium (non-compressable)	Fig.	12	C
220	sealing edge	Fig.	12	B
220'	sealing edge	Fig.	12	C
221	cylinder	Fig.	12	B
222	piston	Fig.	12	A
222'	piston	Fig.	12	A
223	orifice	Fig.	12	B
224	piston rod	Fig.		
230	piston	Fig.	13	A
231	chamber	Fig.	13	A
232	medium (compressable)	Fig.	13	A
233	medium (non-compressable)	Fig.	13	A
234	housing	Fig.	13	A
235	sealing edge	Fig.	13	A
236	central axis	Fig.	13	A
237	medium (non-compressable)	Fig.	14	
238	wall	Fig.	13	A

X	part (of skin)	Fig.	8	B
X'	part	Fig.	8	C
Y	part (of skin)	Fig.	8	B
Y'	part	Fig.	8	C
Z	part (of skin)	Fig.	8	B
Z'	part	Fig.	8	C
XY	hinge	Fig.	8	B
X'Y'	hinge	Fig.	8	C
ZZ	hinge	Fig.	8	B
Z'Z'	hinge	Fig.	8	C

α_1	angle	Fig.	3	B
α_2	angle	Fig.	3	C
β_1	angle	Fig.	5	B
β_2	angle	Fig.	5	C
ϵ_1	angle	Fig.	6	E
ϵ_2	angle	Fig.	6	F
δ	angle	Fig.	9	B
γ	angle	Fig.	9	B
λ	angle	Fig.	8	B

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κ_1	angle	Fig. 8 B
κ_2	angle	Fig. 8 C
η_1	angle	Fig. 8 B
η_2	angle	Fig. 8 C
ξ	angle	Fig. 13 B
v	angle	Fig. 13 B
x	distance	Fig. 11 C
y_1	distance	Fig. 9 B
y_2	distance	Fig. 9 C
z_1	distance	Fig. 13 B
z_2	distance	Fig. 13 C
z_3	distance	Fig. 13 D
d_1	distance	Fig. 12 B
d_2	distance	Fig. 12 C

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